20th CODATA International Conference

Global Disaster Reduction and the Comprehensive Scientific System for Disaster Mitigation

Wang Ang-Sheng

The Center of Disaster Reduction, Chinese Academy of Sciences

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1. Natural Disasters in the world

A. The Unusual Huge Tsunami in Indian Ocean;

B. Hurricane Katrina hit USA;

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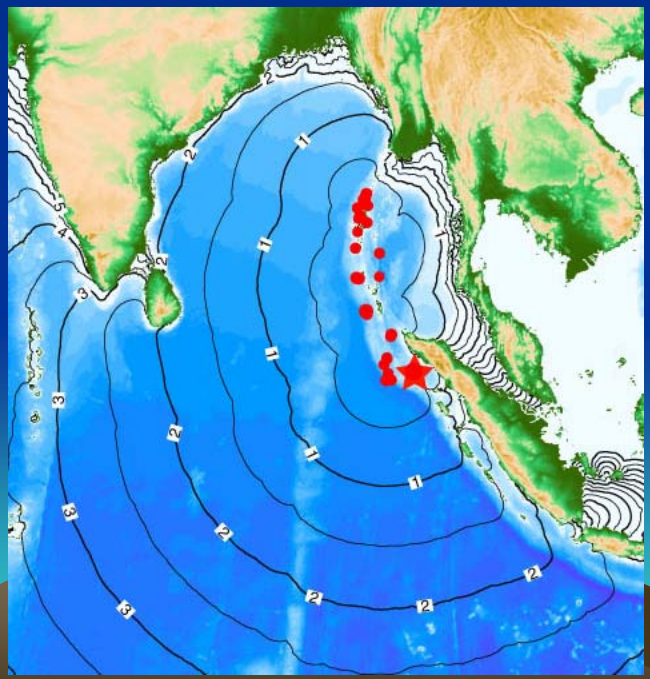
A. The Unusual Huge Tsunami in Indian Ocean

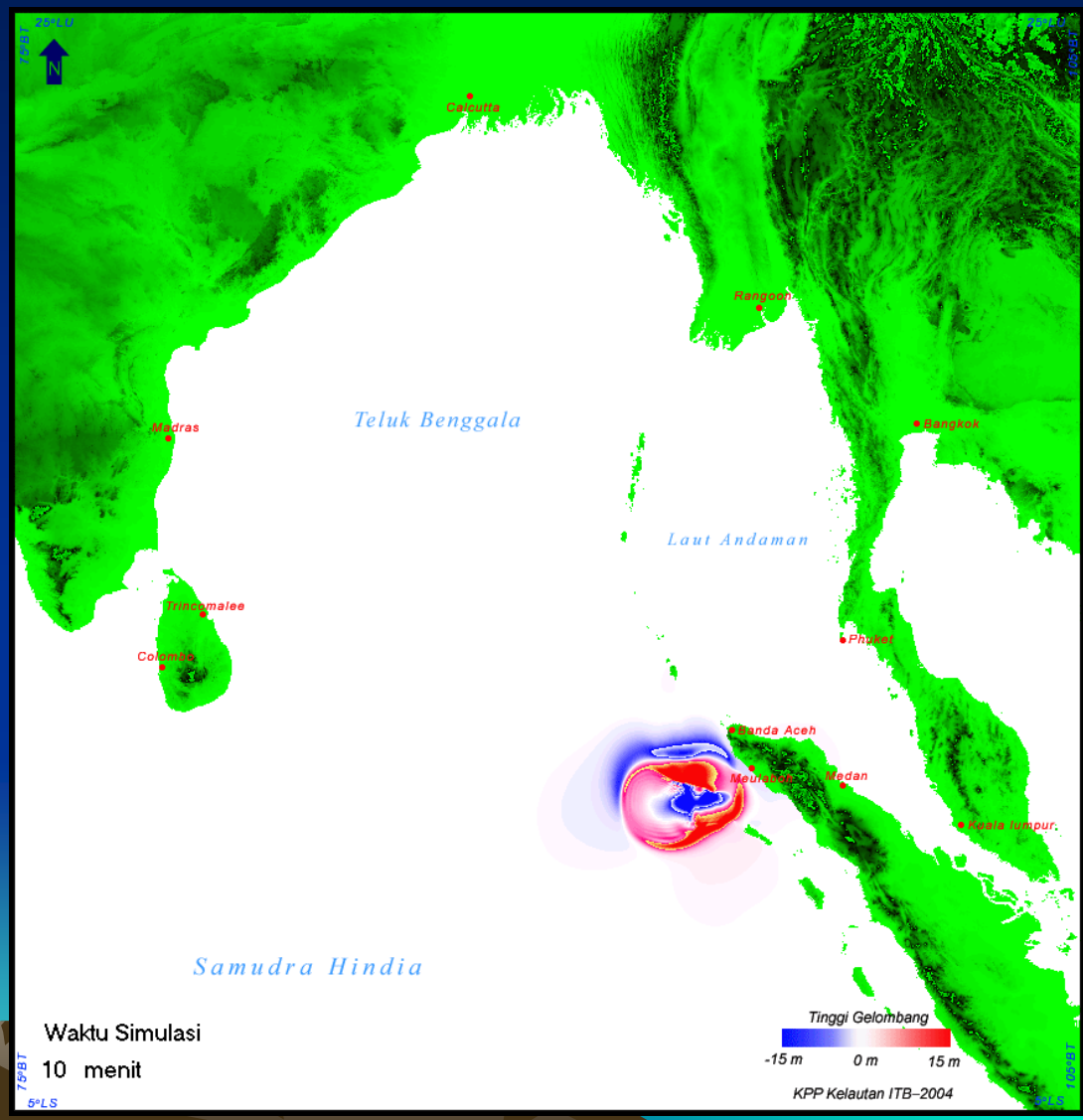
The unusual huge tsunami

- **The unusual huge tsunami caused by the 26 December 2004 Indian Ocean earthquake has resulted in about 300 thousand deaths and much economic loss.**
- **The event instantly shocked the whole world.**
- **Governments and ordinary people then began considering how to unite the whole world so as to deal with serious disasters.**

Natural Disaster in GLOBLE

- **Tsunami in Indian Ocean**
  - At 07: 58: 55.2 (local time) on 26 December 2004
  - a tremendous earthquake at 9.0 magnitude
  - northwest bay of Sumatra Island of Indonesia (3.9 ° N, 95.5° E)
  - total fatality will over 300,000





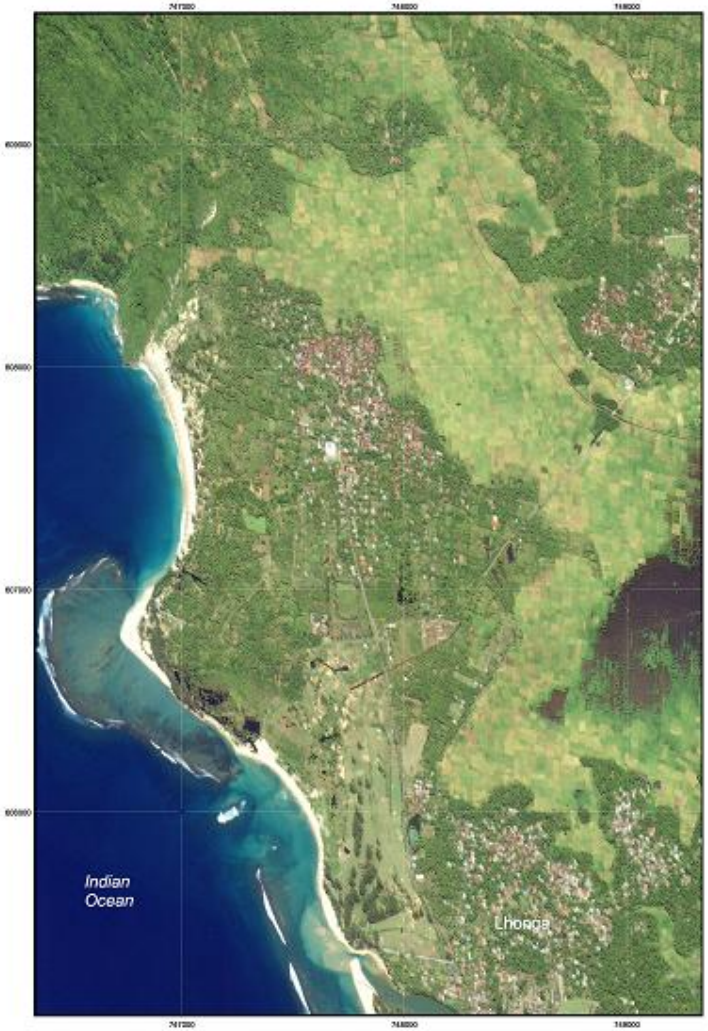
(Latief and Triyoso)


成報
www.singpao.com

Indonesia - Banda Aceh Subset 2

1 : 10.000

IKONOS - January 10, 2003 - PRE-DISASTER IMAGE



IKONOS - December 29, 2004 - POST-DISASTER IMAGE

Center for Satellite based Crisis Information
- Emergency Mapping & Disaster Monitoring -

German Remote Sensing Data Center
German Aerospace Center

DLR

Ikonos - Subsets

Damaged Area

Legend

Coastline before Tsunami

Interpretation

The map shows an area north of the village of Lhonga on the northwestern coast of Sumatra (Indonesia) before and after the devastating Tsunami flood waves, which struck many countries in the Indian Ocean on December 26, 2004. The IKONOS images were taken on January 10, 2003 and December 29, 2004, respectively.

The region of Banda Aceh is one of most severely damaged areas. The Tsunami inundated up to two kilometers inland and destroyed major parts of the coastal plains, including settlements, forests and farmland.

Scale

1 : 10.000

N

Projection: UTM Zone 46 N
Ephemeid: WGS84
Datum: WGS 84

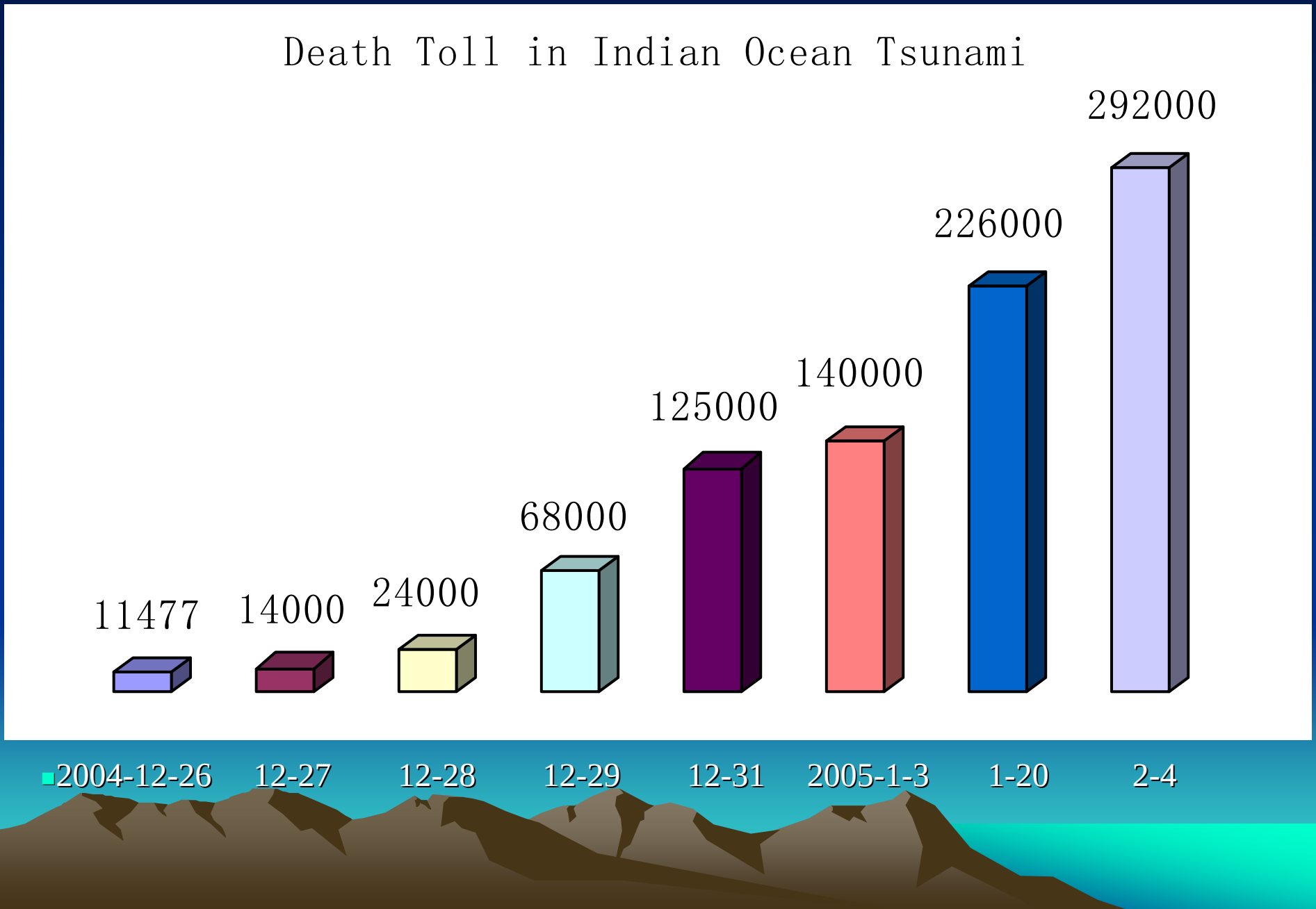
Data Source

IKONOS imagery provided through

CRISP
National University of Singapore

SPACE IMAGING
Visual Information. Visible Results.

Map created December 30, 2004 by ZKI@DLR.DE
updated January 4, 2004 (Version 03)


Death Toll in Indian Ocean Tsunami
11477
14000
24000
68000
125000
140000
226000
292000
2004-12-26
12-27
12-28
12-29
12-31
2005-1-3
1-20
2-4

B. Hurricane Katrina hit USA

Hurricane Katrina hit USA

- **From 29 August to 3 September，2005，Hurricane Katrina hit USA and made another world shaking catastrophic event in the World. The damages exceeded US$ 100 billion and 1,417 people were killed.**

Hurricane Katrina hit USA

- **It shocked all world again, for USA is the nation with the most advanced economy and science-technology in the world however suffers so great damage.**
- **Hurricane Katrina let all people again ponder over how we could make disaster prevention and reduction.**

Satellite Image of Hurricane Katrina on August 28, 2005

People move before Katrina coming

People move before Katrina coming

Hurricane Katrina Hit USA on August 29, 2005

Hurricane Katrina Coming

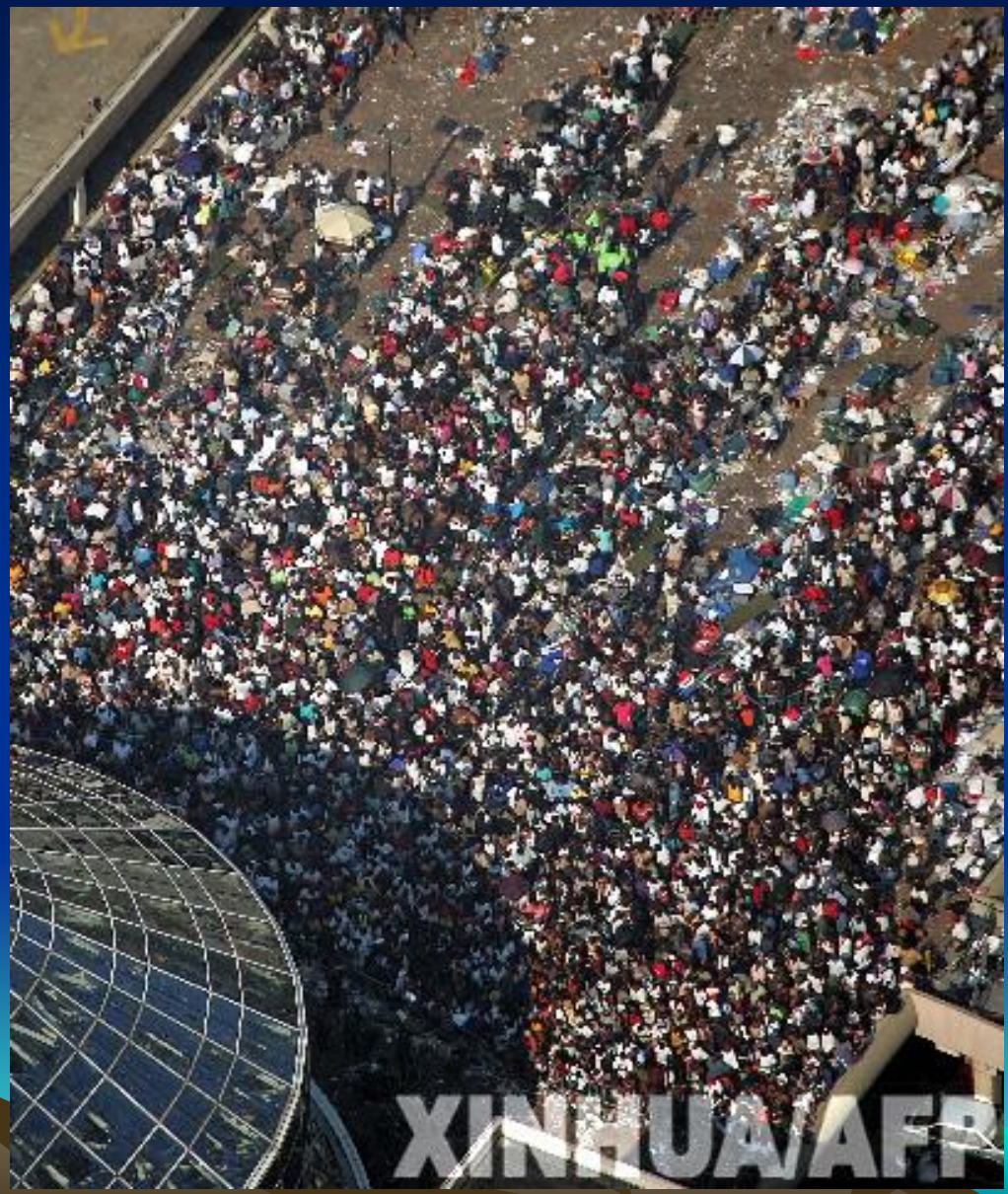
Fierce Wind

Fierce Wind

Flood

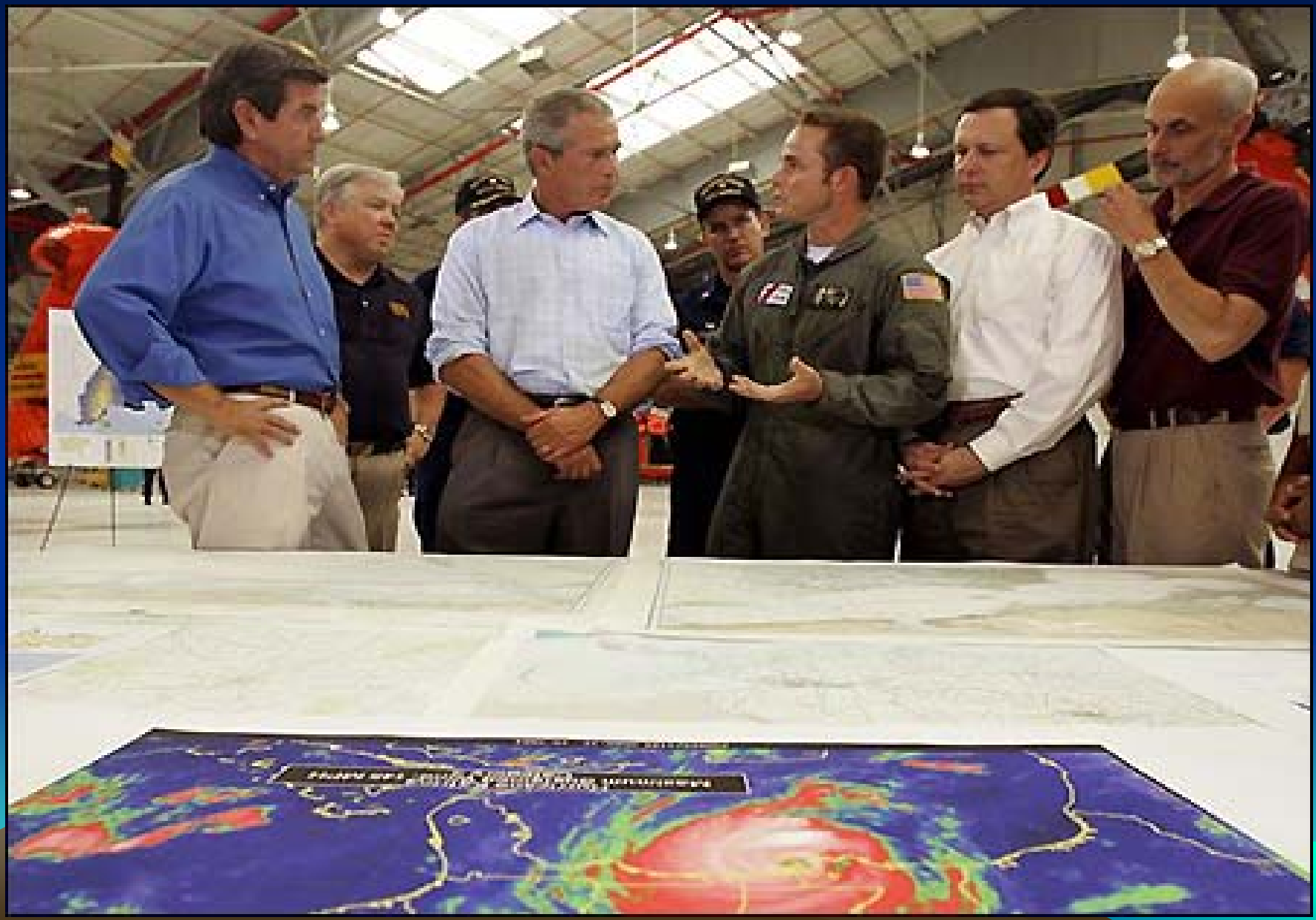
Flood

People Collect in SuperDome



City in Flood

USA President Bush inspect damage by Hurricane Katrina

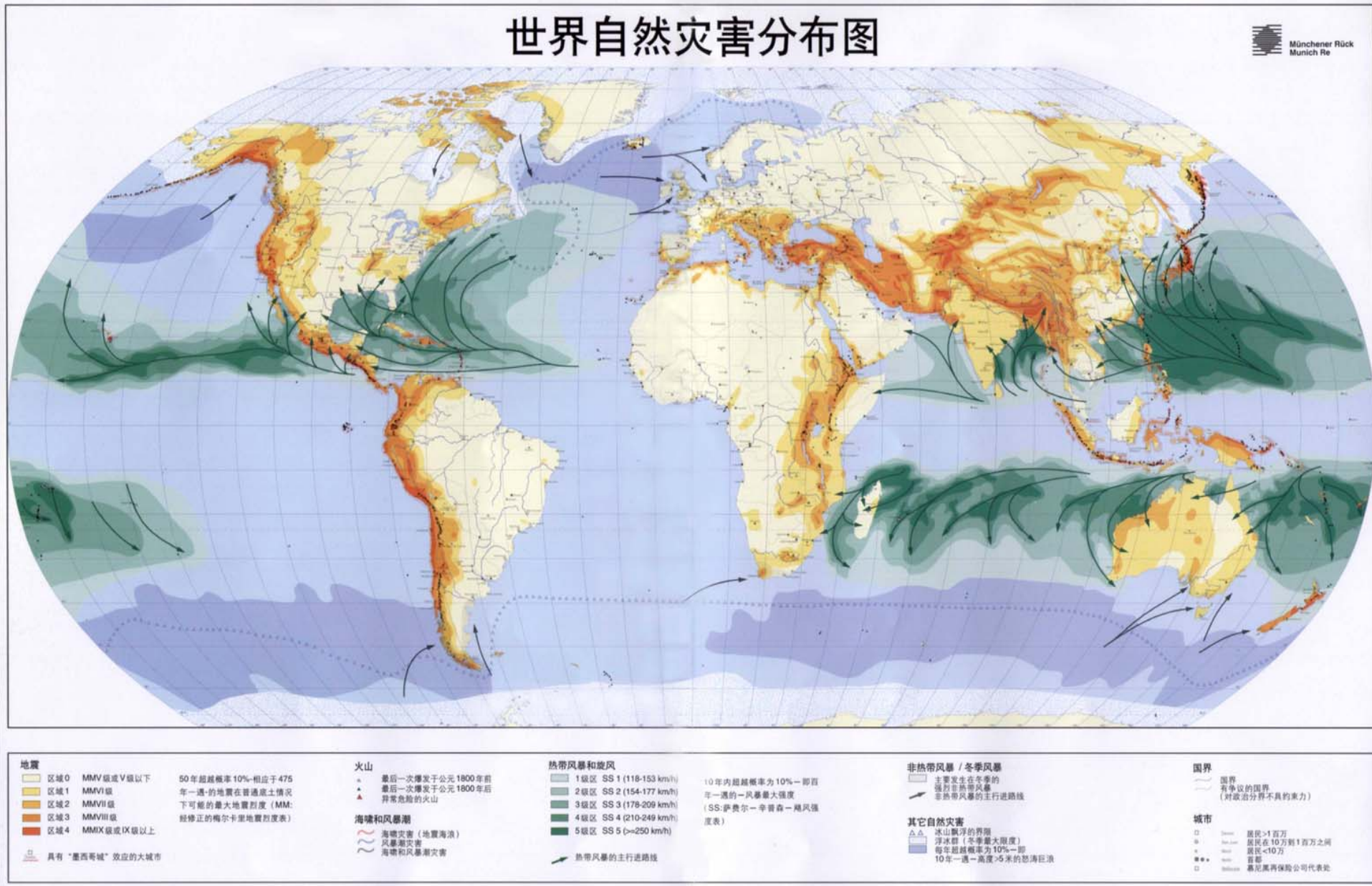


People sleep in SuperDome

City in Flood

C. Disaster in the World

1.1 We are facing severe natural disasters



1923

1995

Japan Earthquake

Hurricane Disaster

Date: 25 Oct. to 8 Nov., 1998

Place:Central American, Hurricane Mitch

Dead: 9200

Loss: 5500 mill US$

Date: August, 1992

Place: Southeast USA, Hurricane Andrew

Dead: 62

Loss: 30 bill US$

07

2002 winter storm hit Germany

1998 Ice storm covered Canada

2003 Drought disaster occurred in India

1999 worst flood catastrophe of Mexico

2002 summer Flood in Europe

2003 waterspout in Cyprus

Major Disasters in the World

According to the Statistics from 1950 to 1999, all kinds of sudden natural disasters (excluding drought) have resulted in :

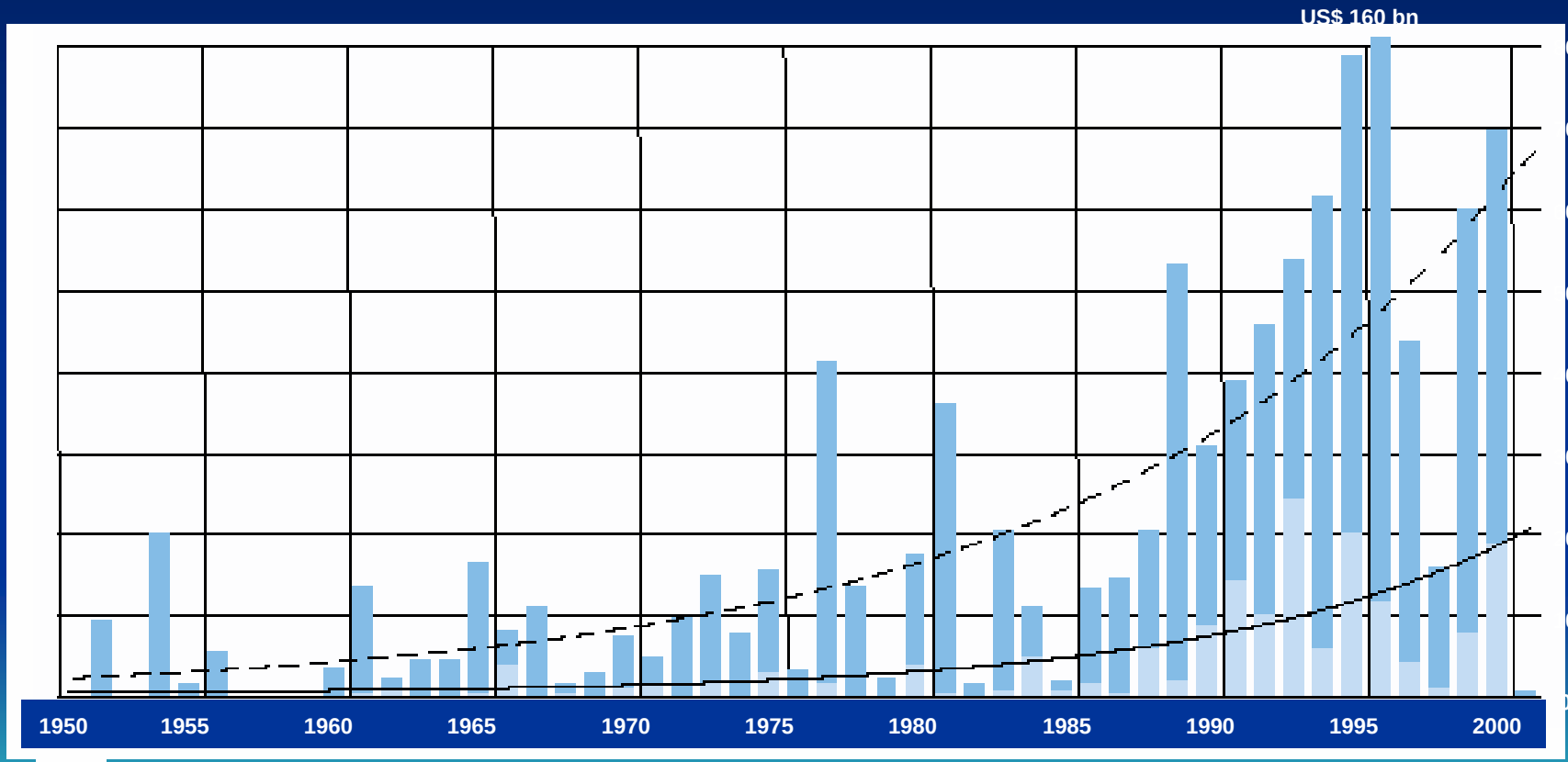
* A death toll of up to 1,400,000 ;
* Economic losses up to 960 billion US$.

All kinds of sudden natural disasters

	Frequency	Death Toll	Economic Loss
– Storms	38%	45%	28%
– Earthquakes	29%	47%	35%
– Floods	27%	7%	30%
– Others	6%	1%	7%

(Storms including tsunamis, typhoons, storm tides, etc.)

Insured and Uninsured Losses from Natural Disasters (US Billions)



经济损失（10亿US$）；保险赔付(10亿US$)

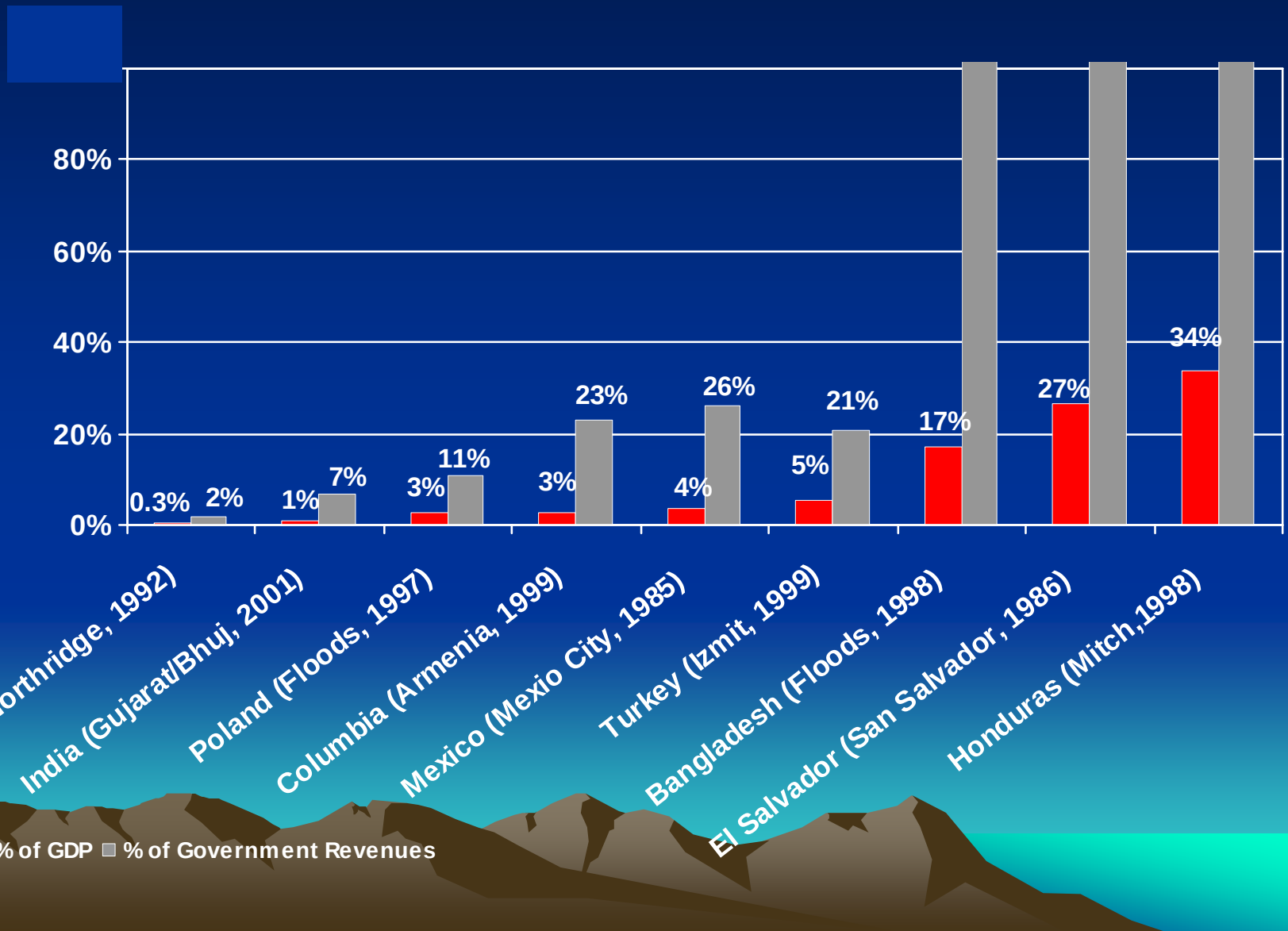
Source: Swiss Re

Economic Losses in the World

	Losses (Bill US$)	Insure (Bill US$)
50-60th	5	1
70-80th	18	3
90th	45	12
21Centenary	80	25

Fiscal and Economic Effects of Disasters

Uninsured Economic Loss as % of GDP and Government Revenues



D. Disaster in China

中国大洪水

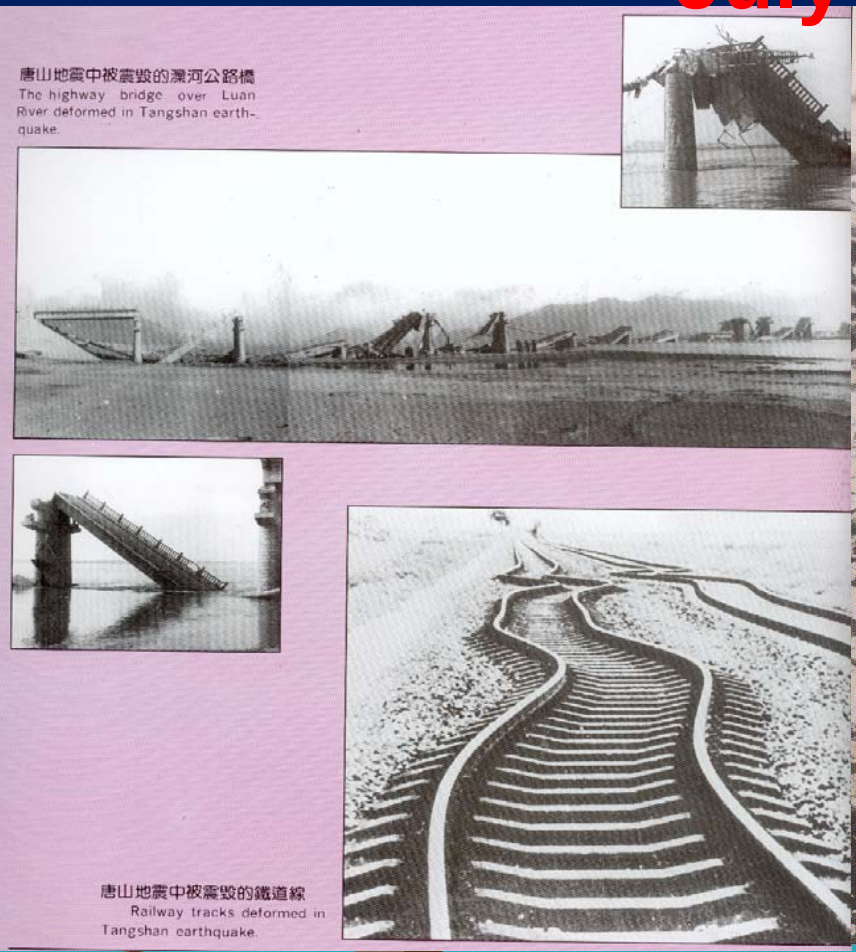
1998年

1954年

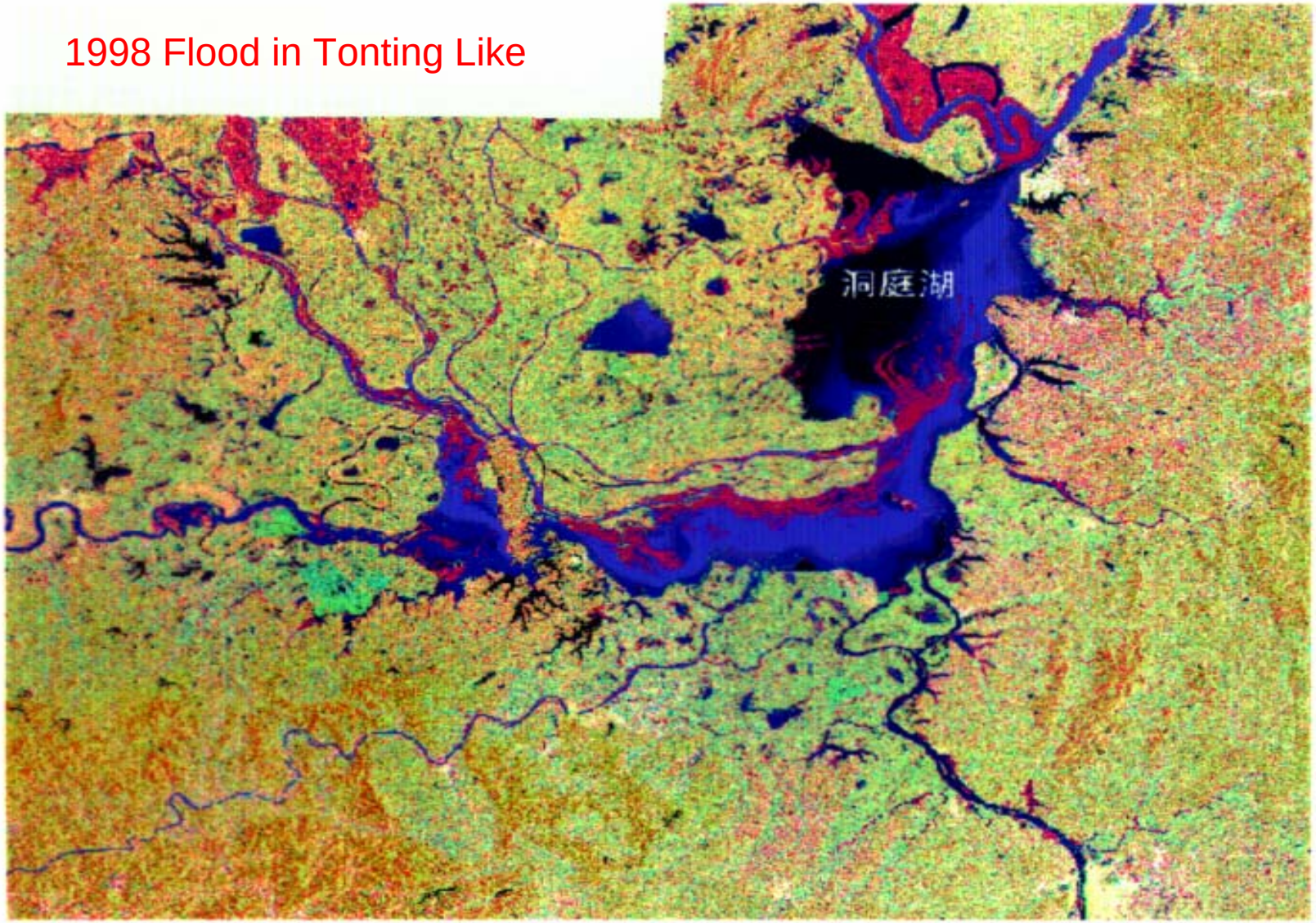
1931年

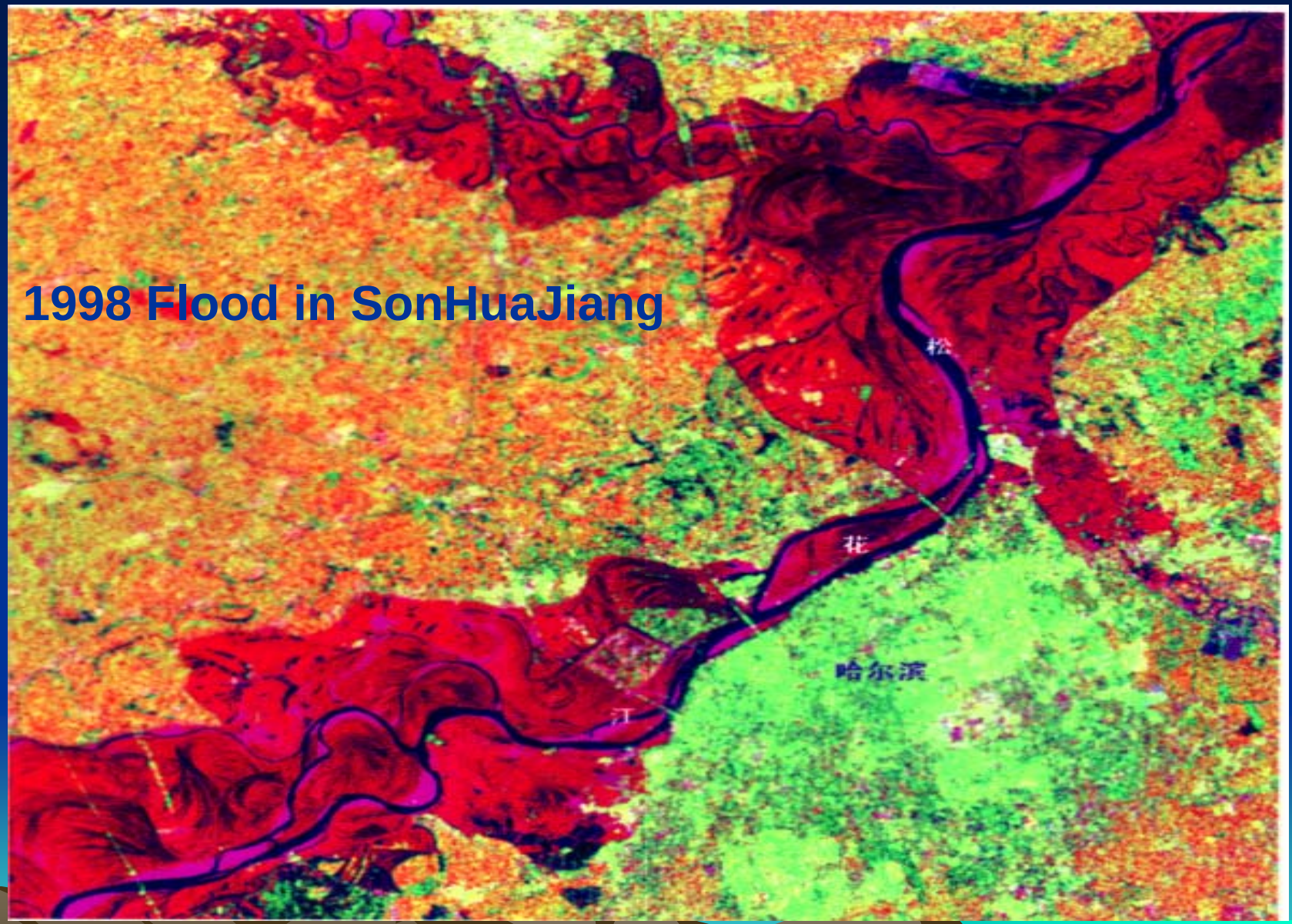
TangShan Earthquake In China

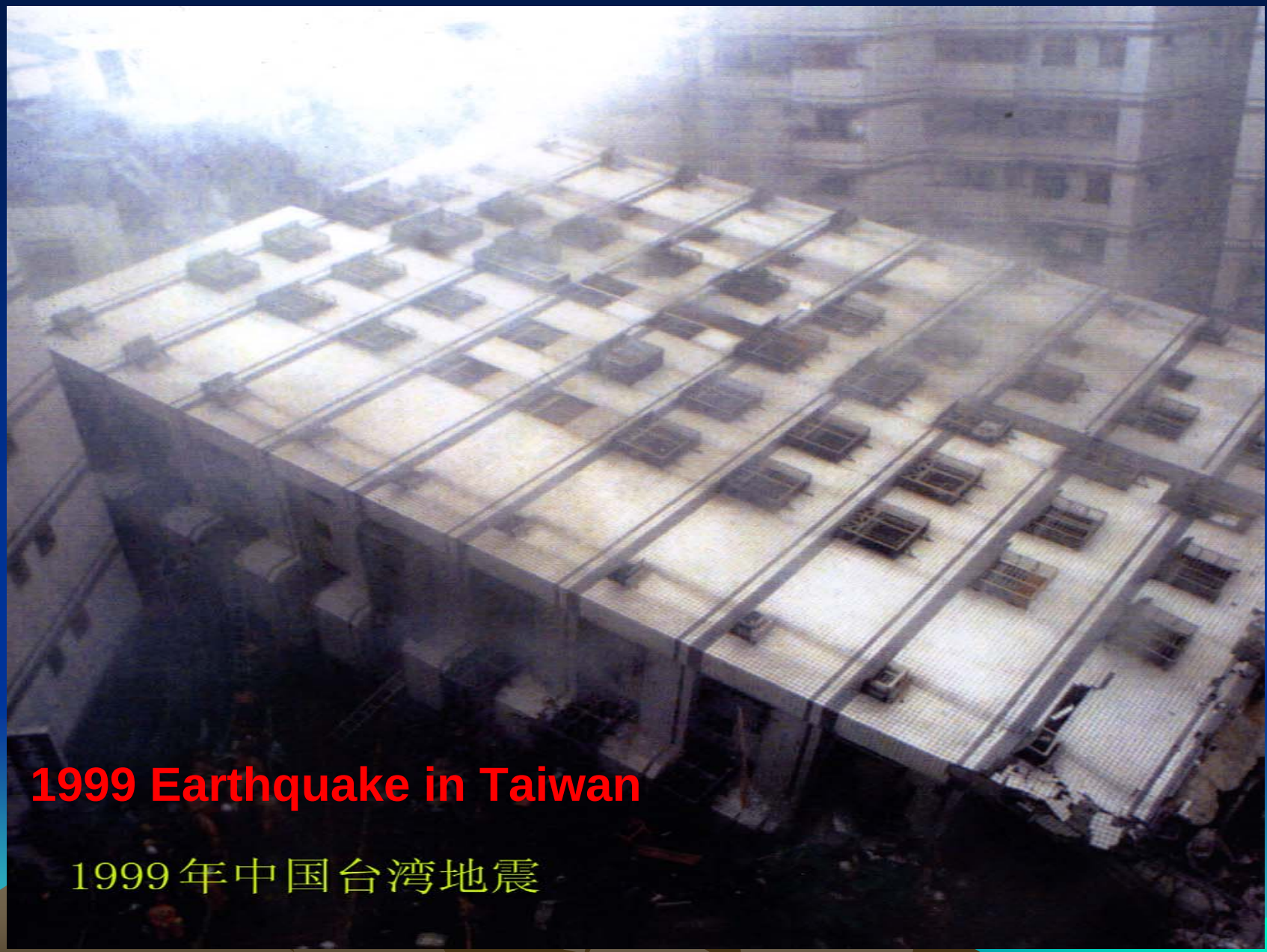
July 28，1976



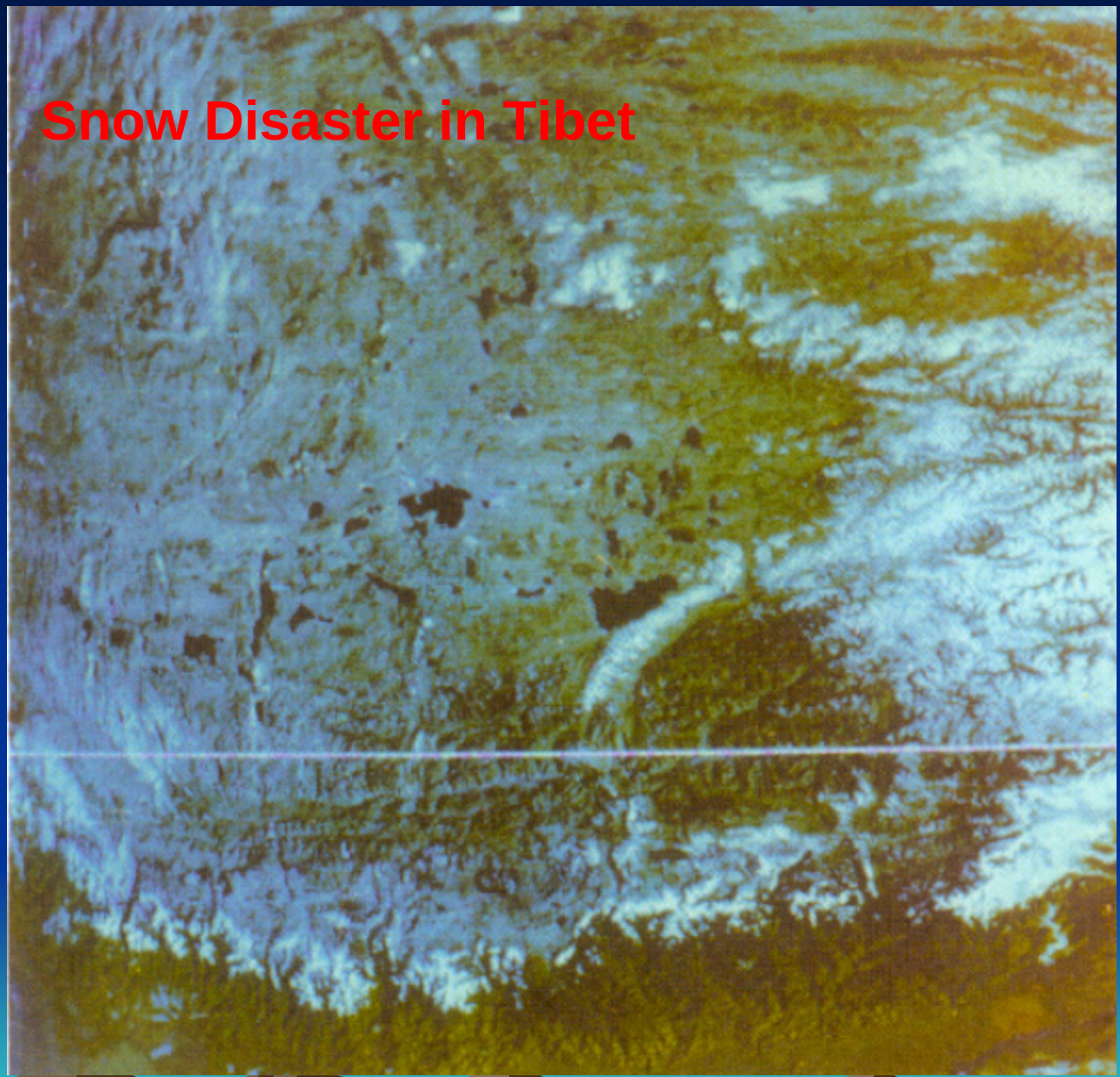
1998 Flood in Tonting Like

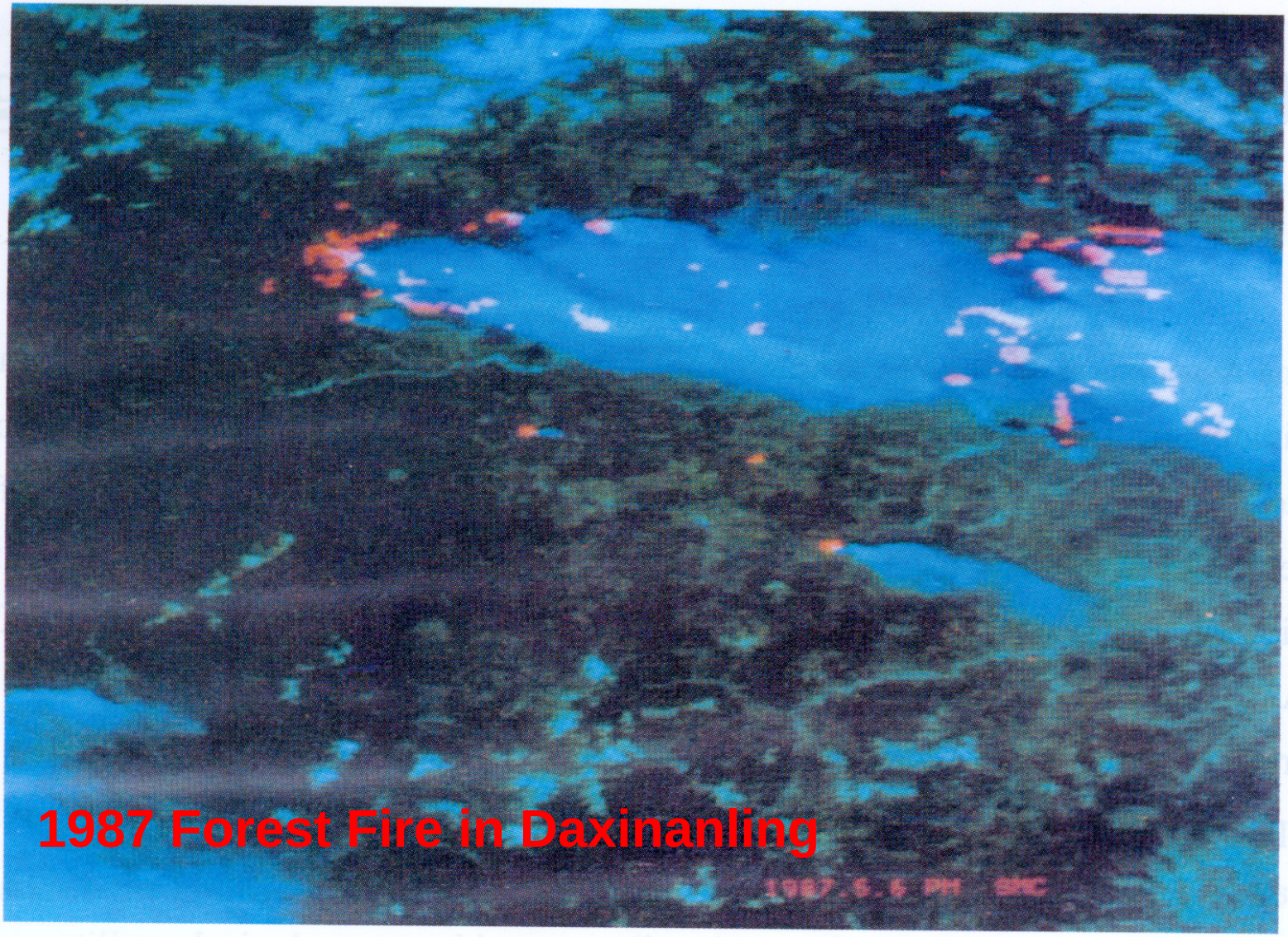



1998 Flood in SonHuaJiang
松
花
哈尔滨
江

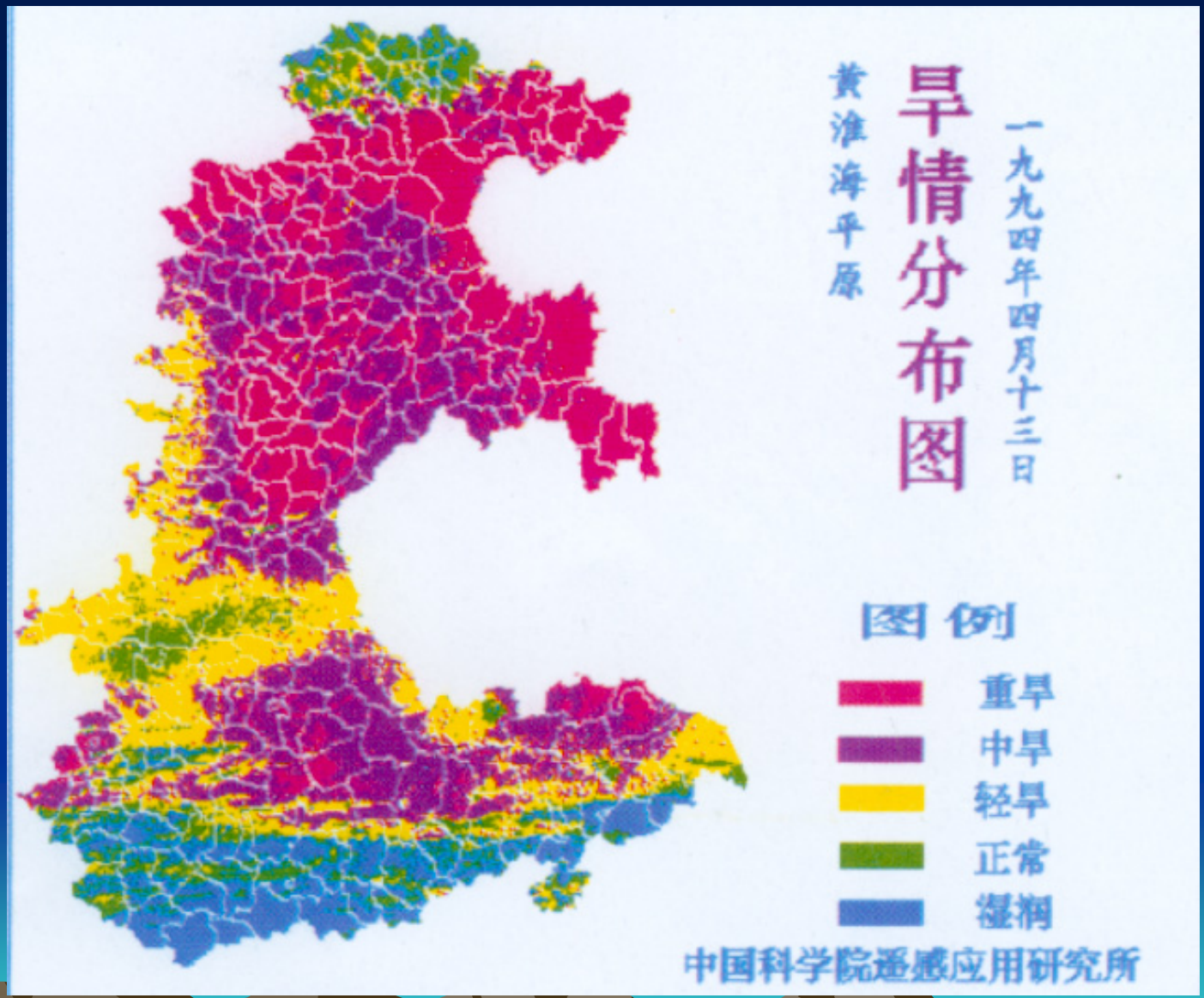

1999 Earthquake in Taiwan
1999年中国台湾地震

Snow Disaster in Tibet




1987 Forest Fire in Daxinanling

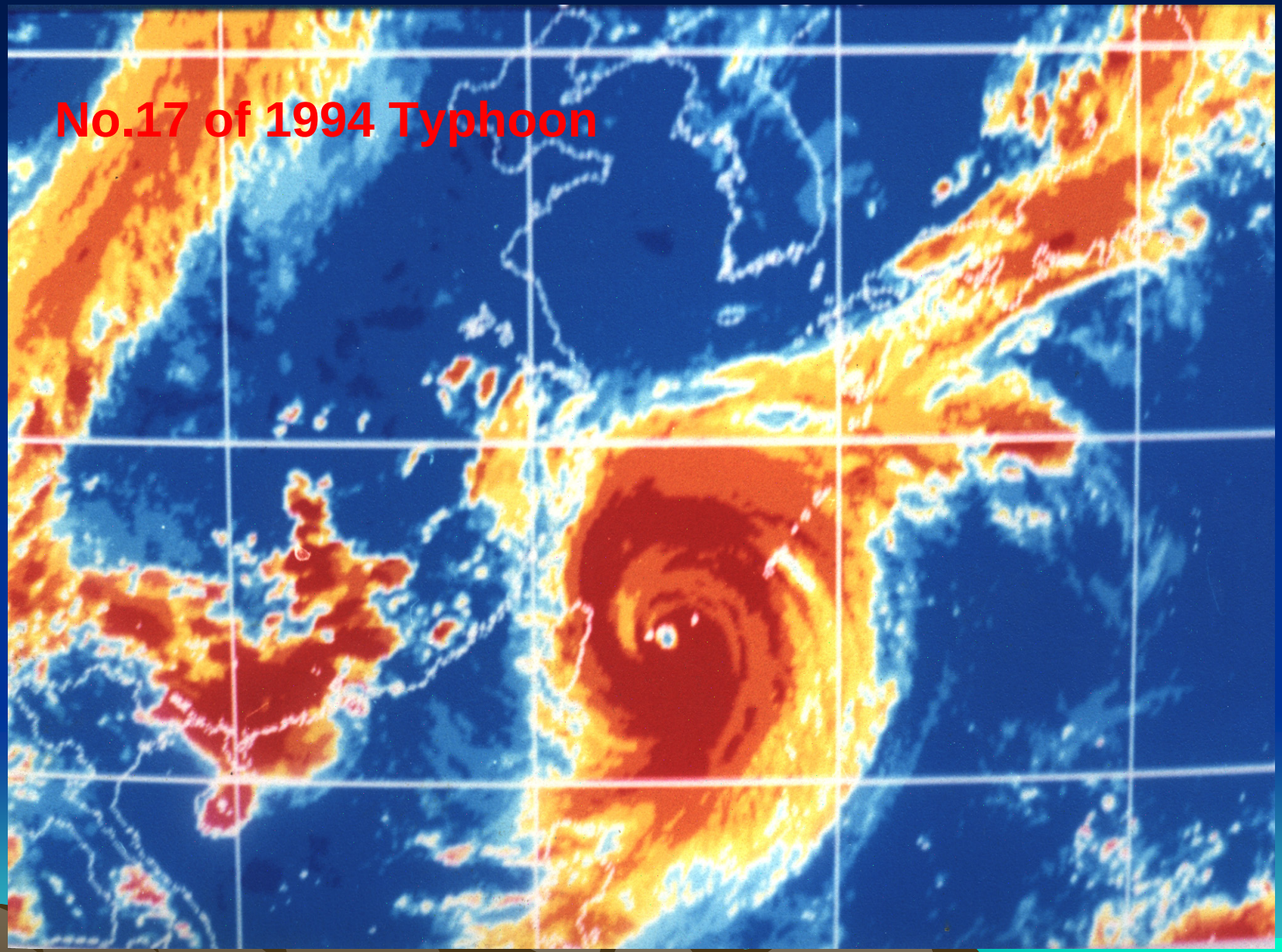
1994 Drought in Northern China

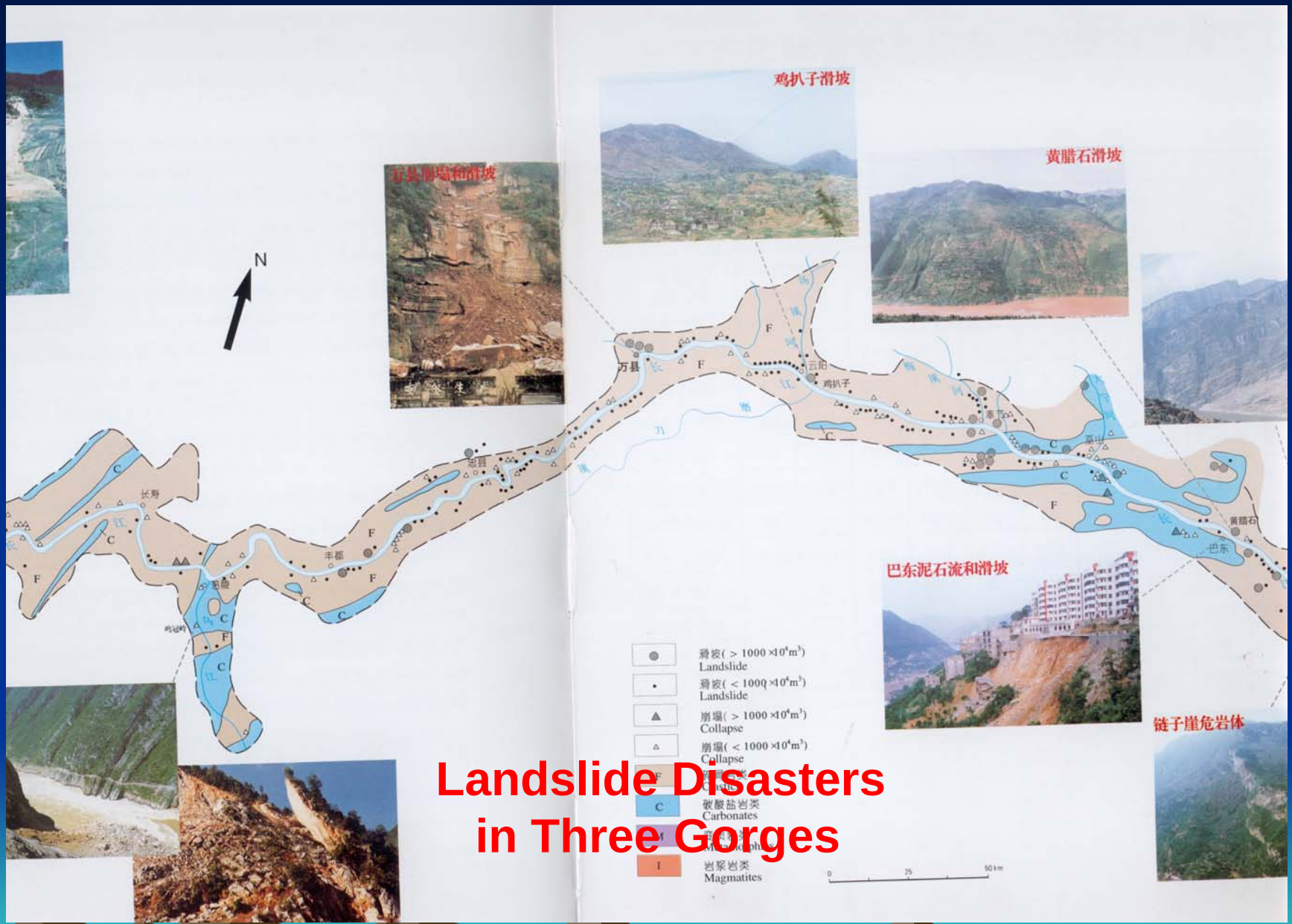


Great Drought in 1997

Ministry of Water Resources

Drought in China

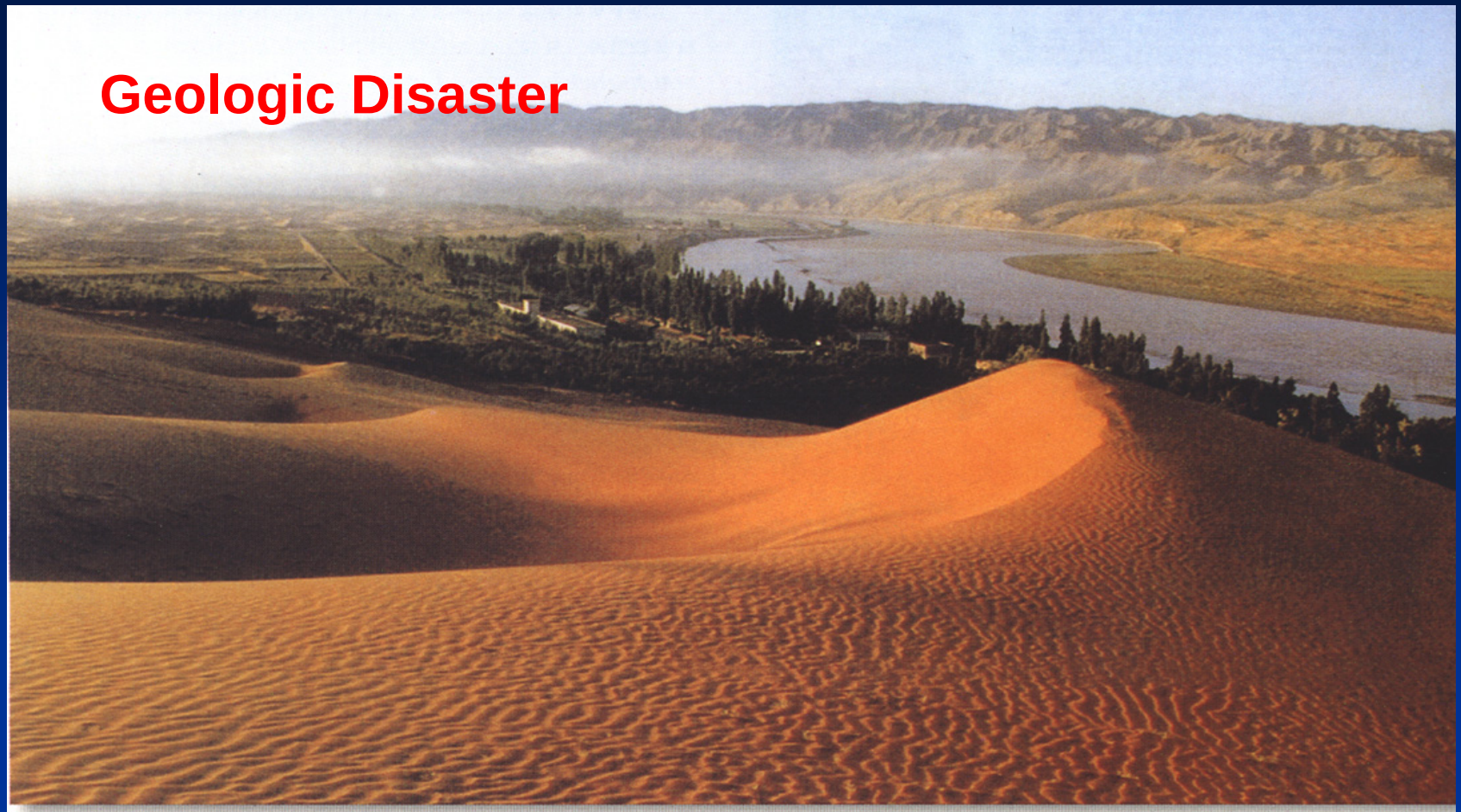

No.17 of 1994 Typhoon



Landslide Disasters in Three Gorges

新滩滑坡

Geologic Disaster

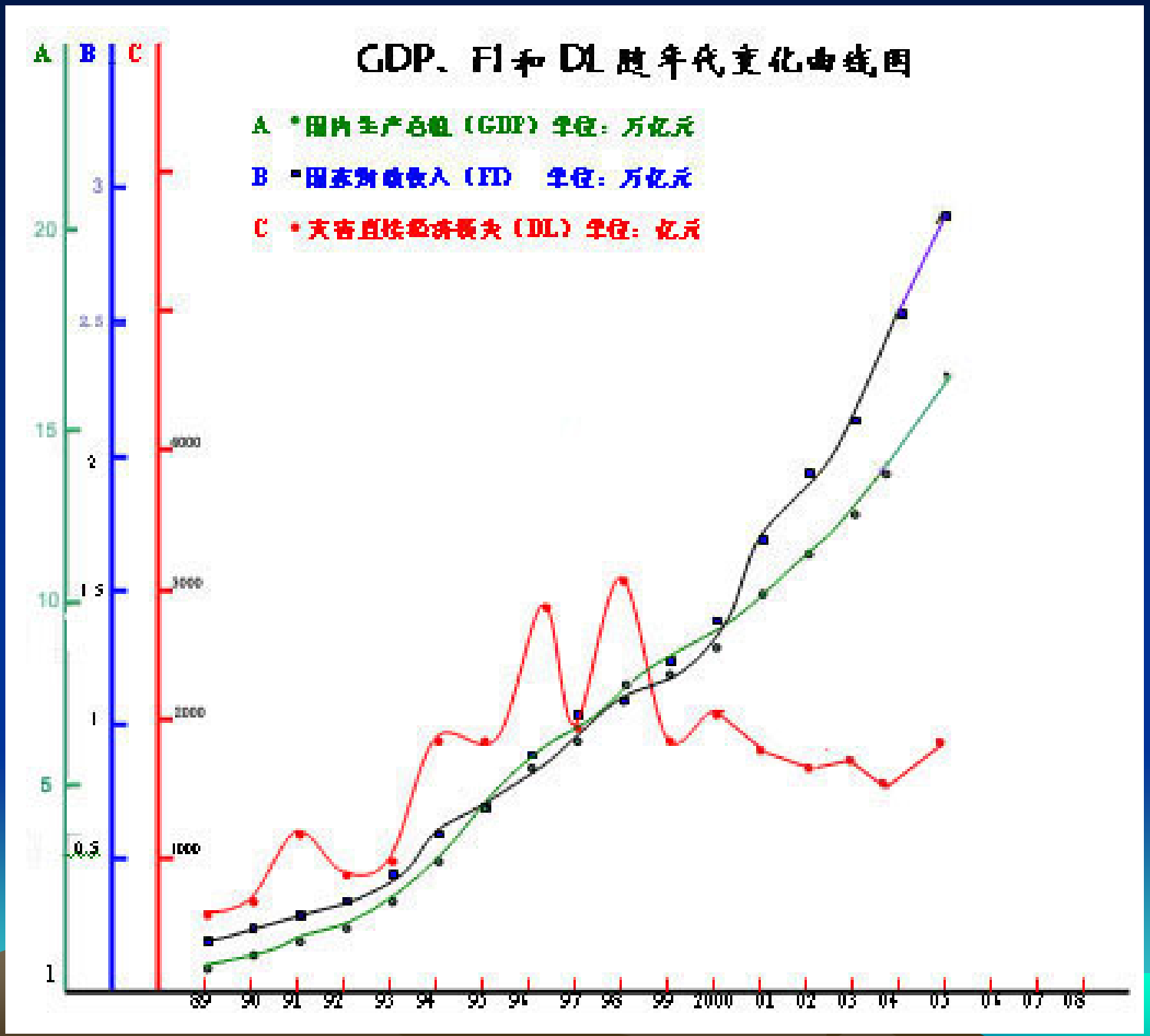


中国科学院在全国各地设立了 80 多个野外观测站，它们既是长期从事科学观测和定位试验的研究基地，又是先进科学技术成果试验、示范和推广的基地。图为位于宁夏中卫县的沙坡头沙漠研究站，该站为建设包兰铁路治沙体系做出了重要贡献。

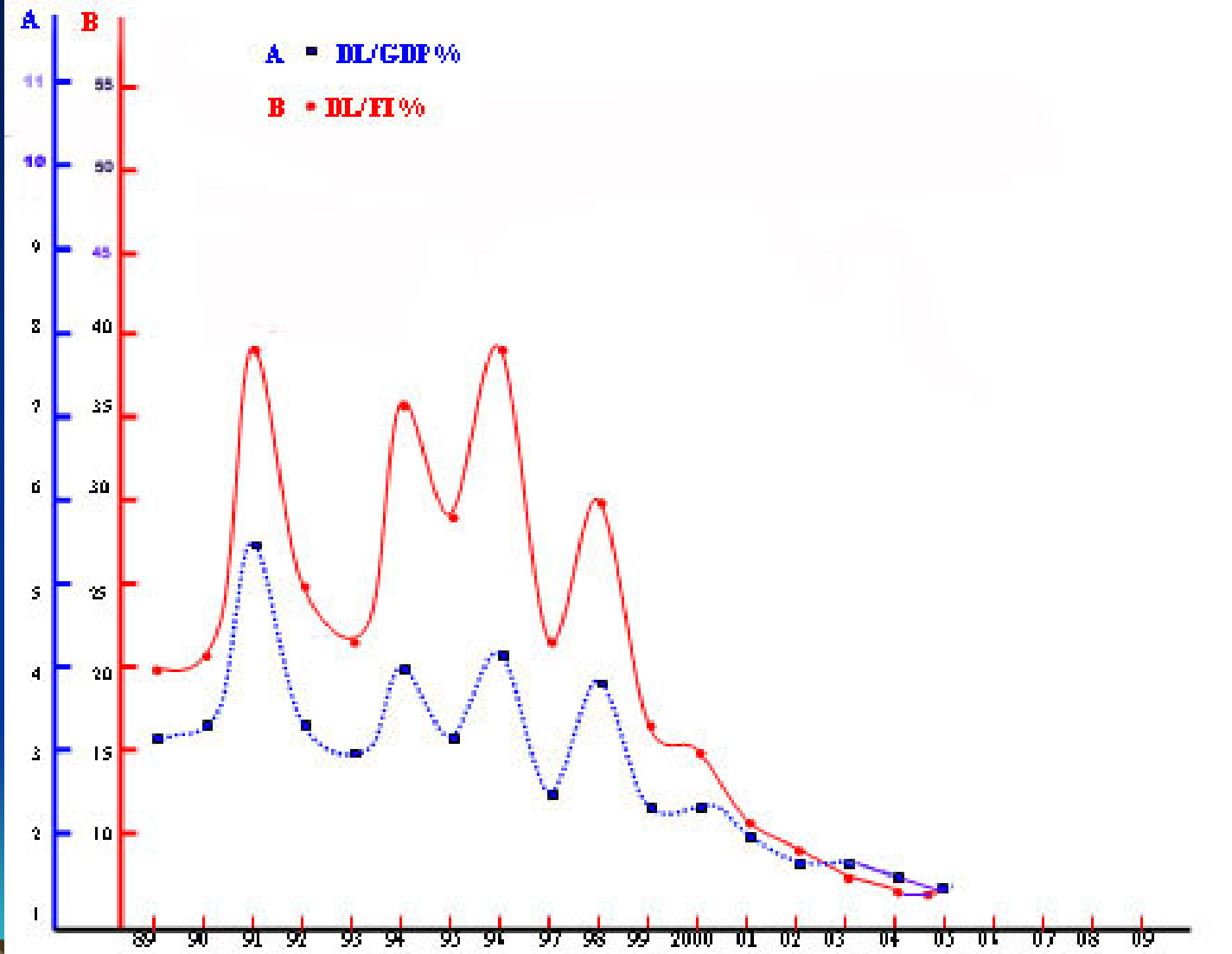
CAS has set up more than 80 field observation stations, which are not only the research bases for long-term scientific observation and experiment, but also the test, demonstration and promotion bases of scientific findings. The photo shows the Shapotou Desert Research Station in Zhongwei County, Ningxia Hui Autonomous Region, which has accomplished a lot to the prevention of flowing sand for the Baotou-Lanzhou Railway.


Insect Pest

Mouse Disasters


GDP、FI和DL随年代变化曲线图
A *国内生产总值（GDP）单位：万亿元
B *国家财政收入（FI） 单位：万亿元
C *灾害直接经济损失（DL）单位：亿元
A
B
C
20
15
10
5
1
3
2.5
2
1.5
1
0.5
8000
6000
4000
2000
89
90
91
92
93
94
95
96
97
98
99
2000
01
02
03
04
05
06
07
08

DL/GDP和DL/FI随年代变化曲线图



2. Comprehensive Scientific System for Disaster Mitigation and Reduction

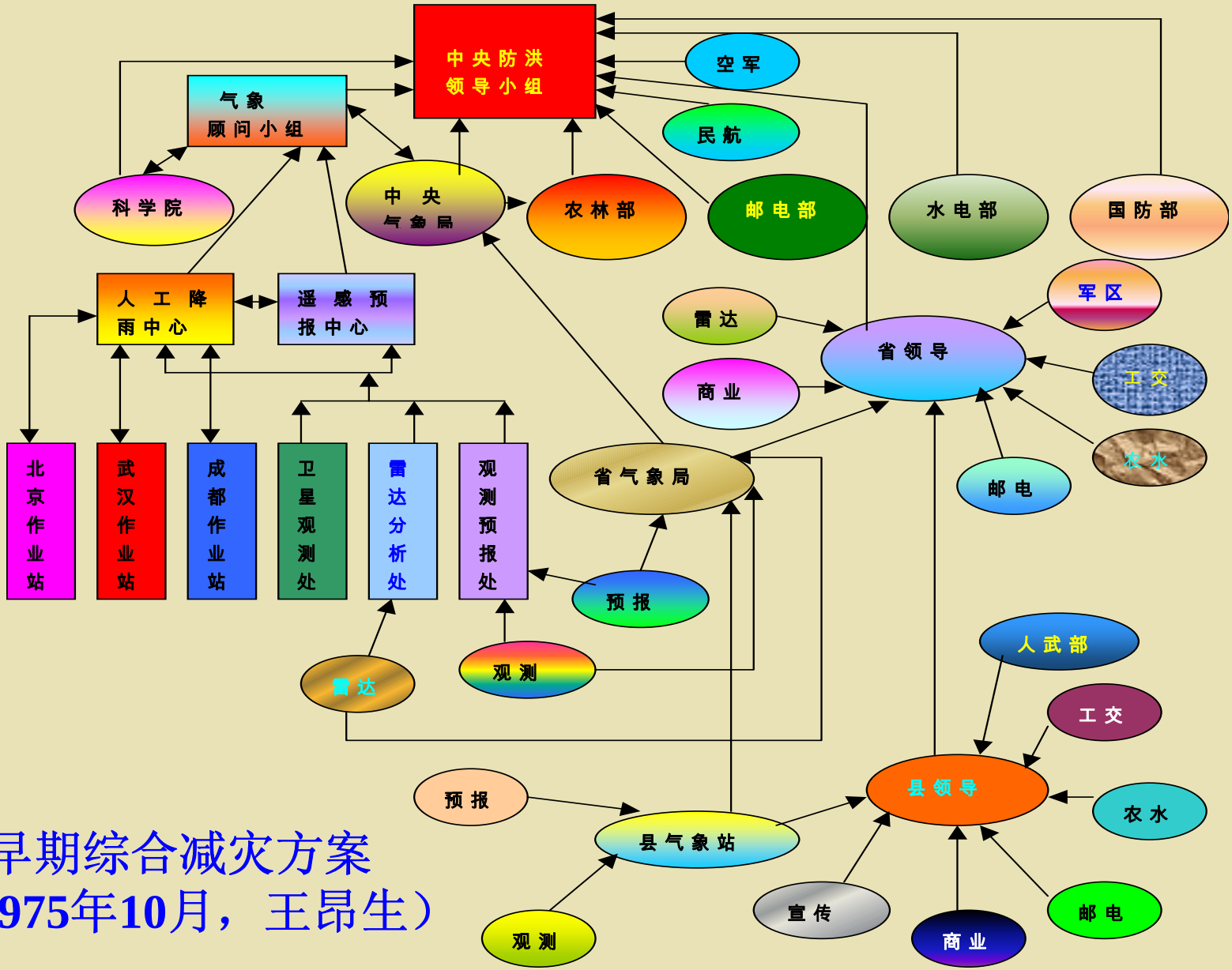
A. The Plan of Comprehensive Scientific System for Disaster Mitigation;

B. Disaster Reduction System for Typhoon and Heavy Rain;

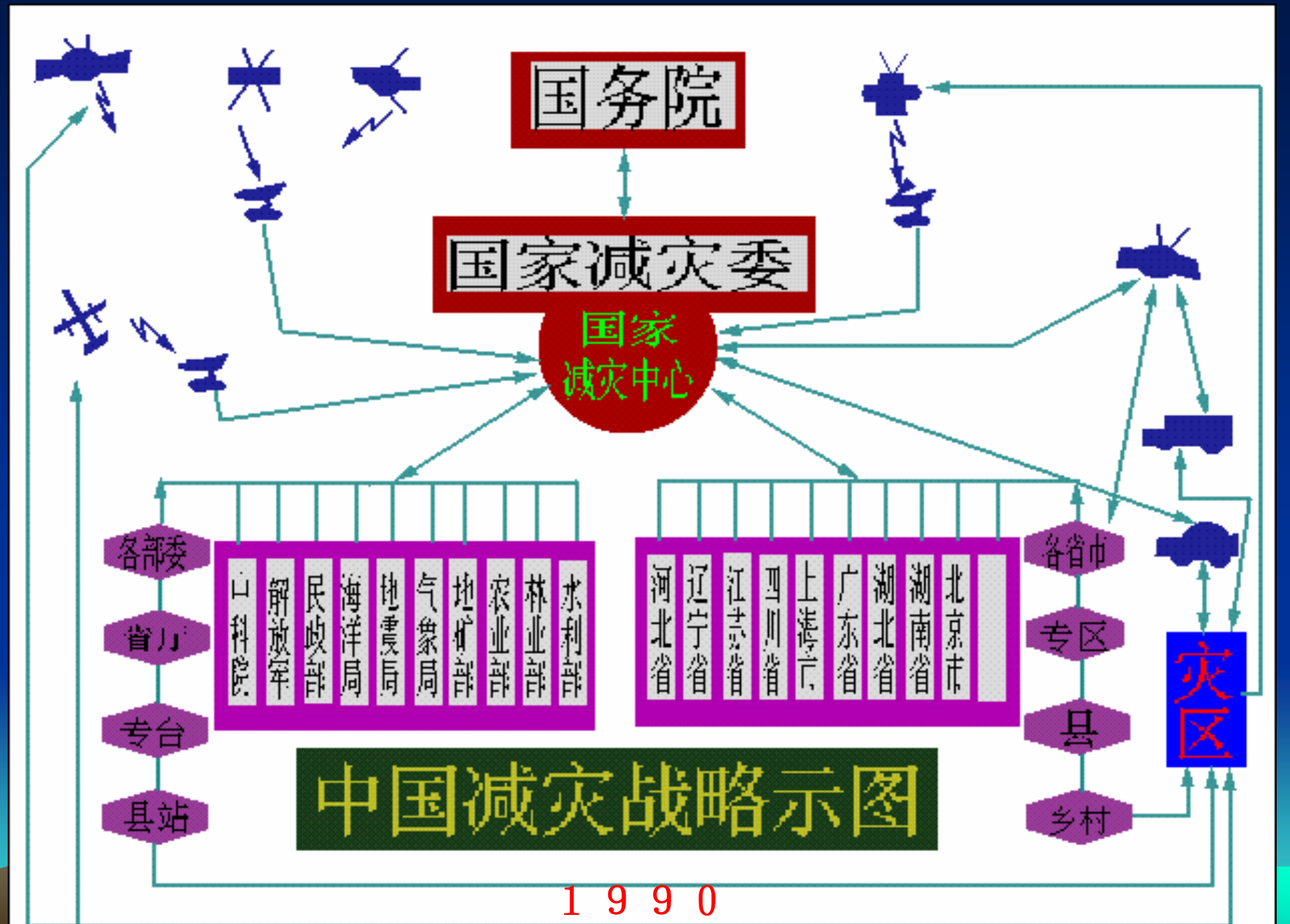
C. China Comprehensive Scientific System of Disaster Reduction.

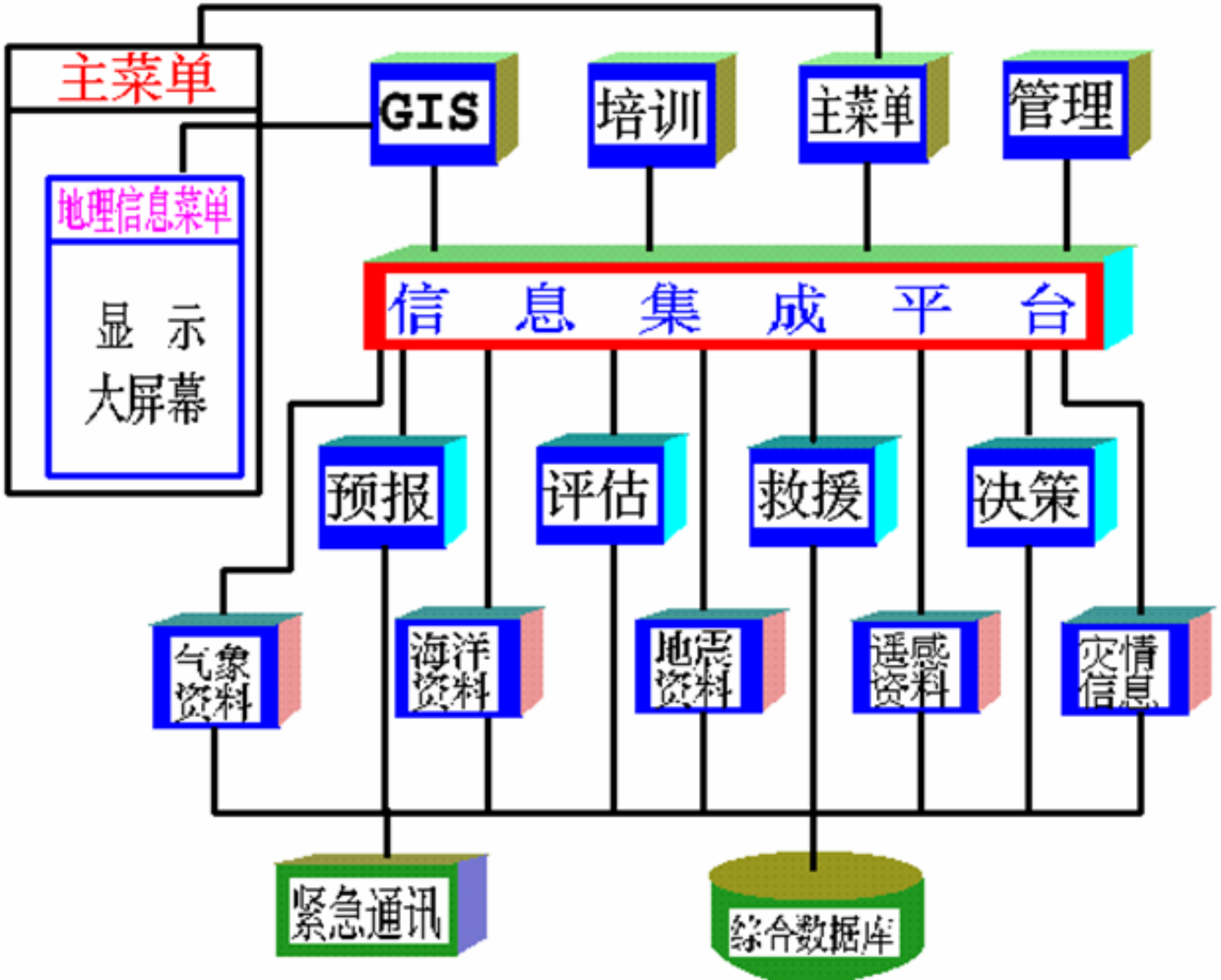
A . The Plan of Comprehensive Scientific System for Disaster Mitigation

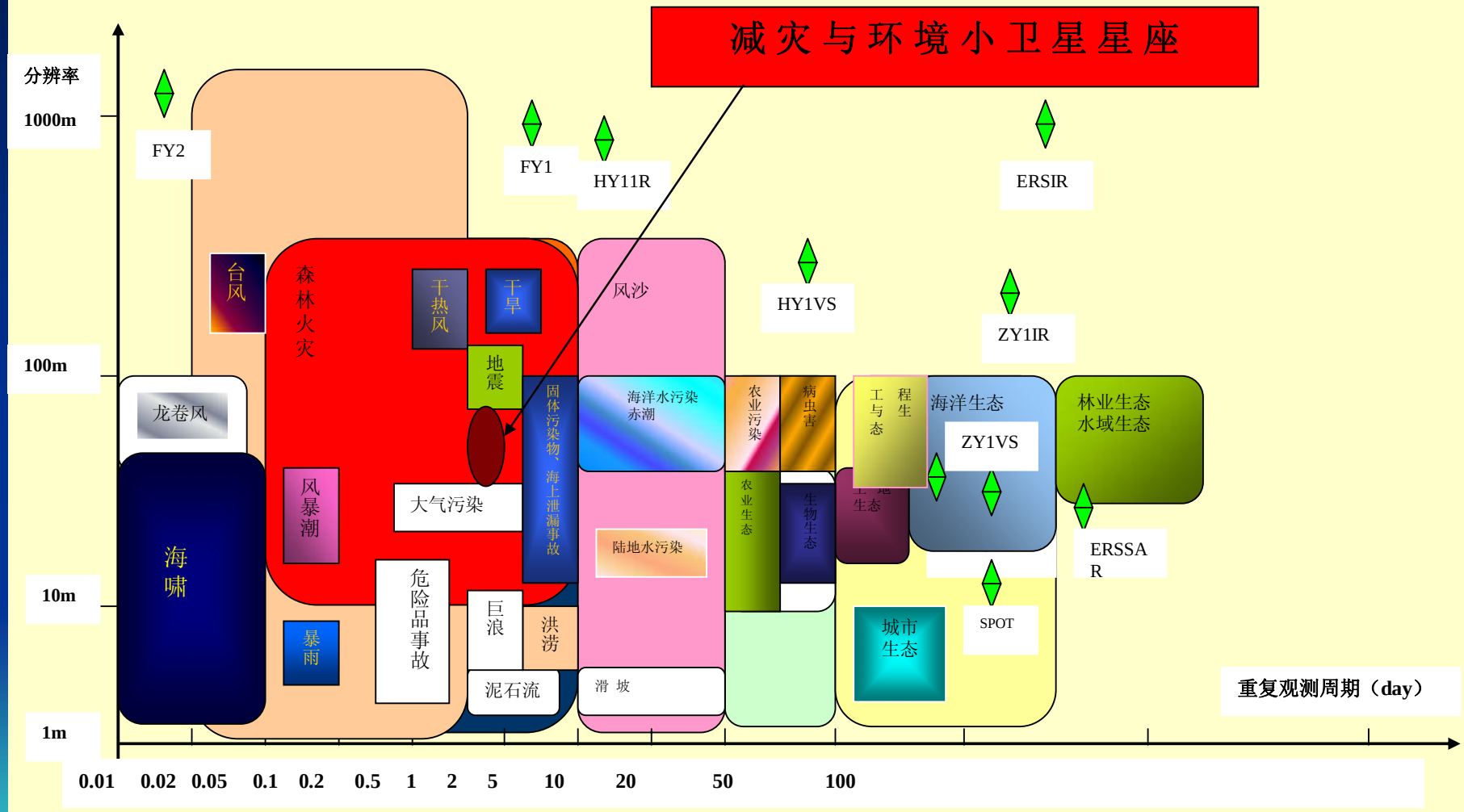
a. The plan on 1975;
b. The plan on 1990;
c. The Plan of Satellite for Disaster Reduction (1992);
d. The Plan of Setup for all China on Disaster Reduction (1998).

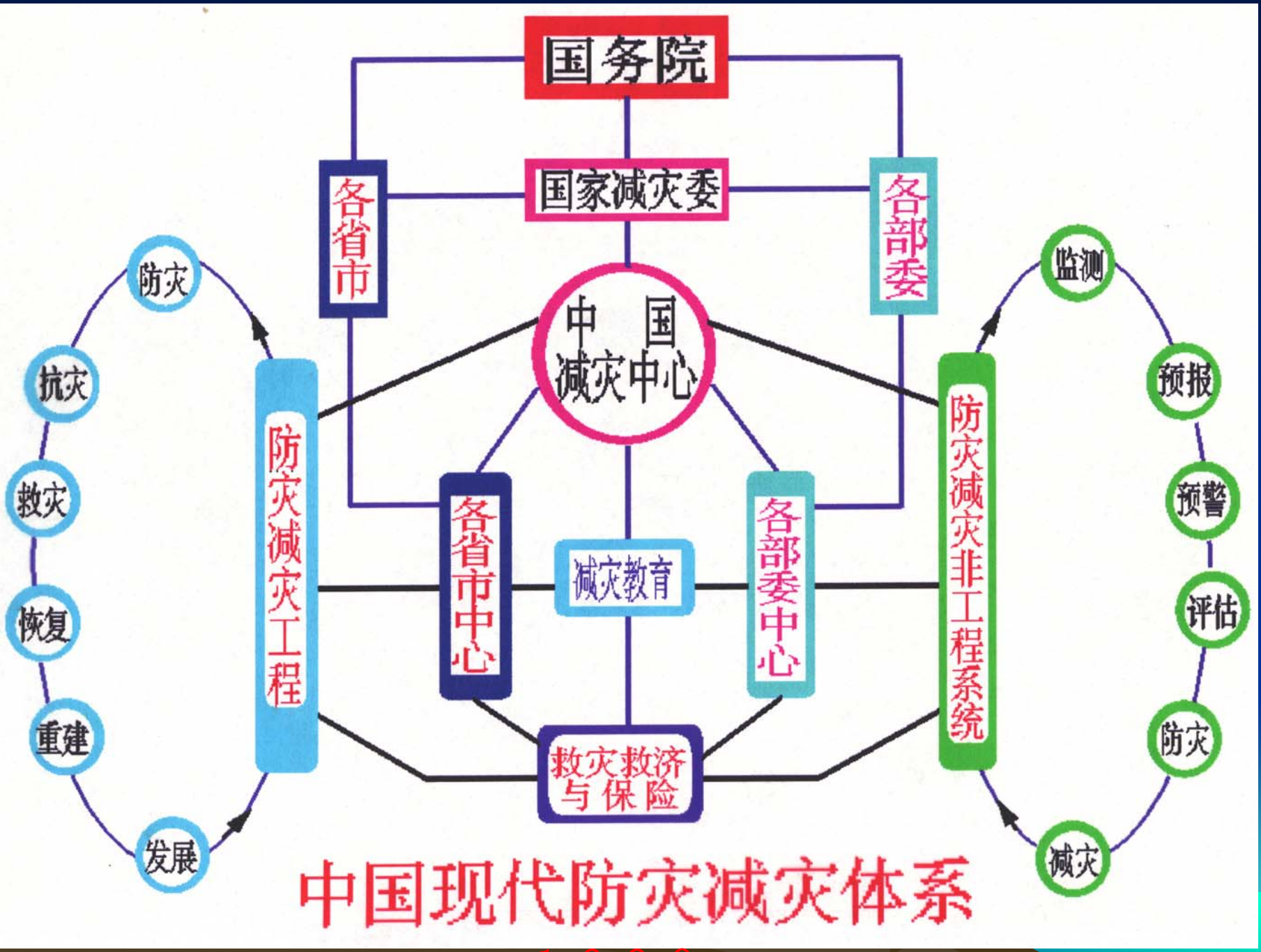


早期综合减灾方案
（1975年10月，王昂生）


国务院
国家减灾委
国家减灾中心
各部委
省厅
专台
县站
水利部
林业部
农业部
地矿部
气象局
地震局
海洋局
民政部
解放军
科院
北京市
湖南省
湖北省
广东省
上海市
四川省
江苏省
辽宁省
河北省
各省市
专区
县
乡村
灾区
中国减灾战略示图
1990


主菜单
地理信息菜单
显 示
大屏幕
GIS
培训
主菜单
管理
信 息 集 成 平 台
预报
评估
救援
决策
气象资料
海洋资料
地震资料
遥感资料
灾情信息
紧急通讯
综合数据库


减灾与环境小卫星星座
分辨率
1000m
100m
10m
1m
FY2
FY1
HY11R
ERSIR
HY1VS
ZY1IR
ZY1VS
ERSSAR
SPOT
台风
森林火灾
干热风
干旱
地震
风沙
龙卷风
海啸
风暴潮
暴雨
大气污染
危险品事故
固体污染物、海上泄漏事故
巨浪
洪涝
泥石流
滑坡
海洋水污染
赤潮
陆地水污染
农业污染
病虫害
农业生态
生物生态
工程与生态
海洋生态
林业生态
水域生态
城市生态
重复观测周期（day）
0.01 0.02 0.05 0.1 0.2 0.5 1 2 5 10 20 50 100
1 9 9 2



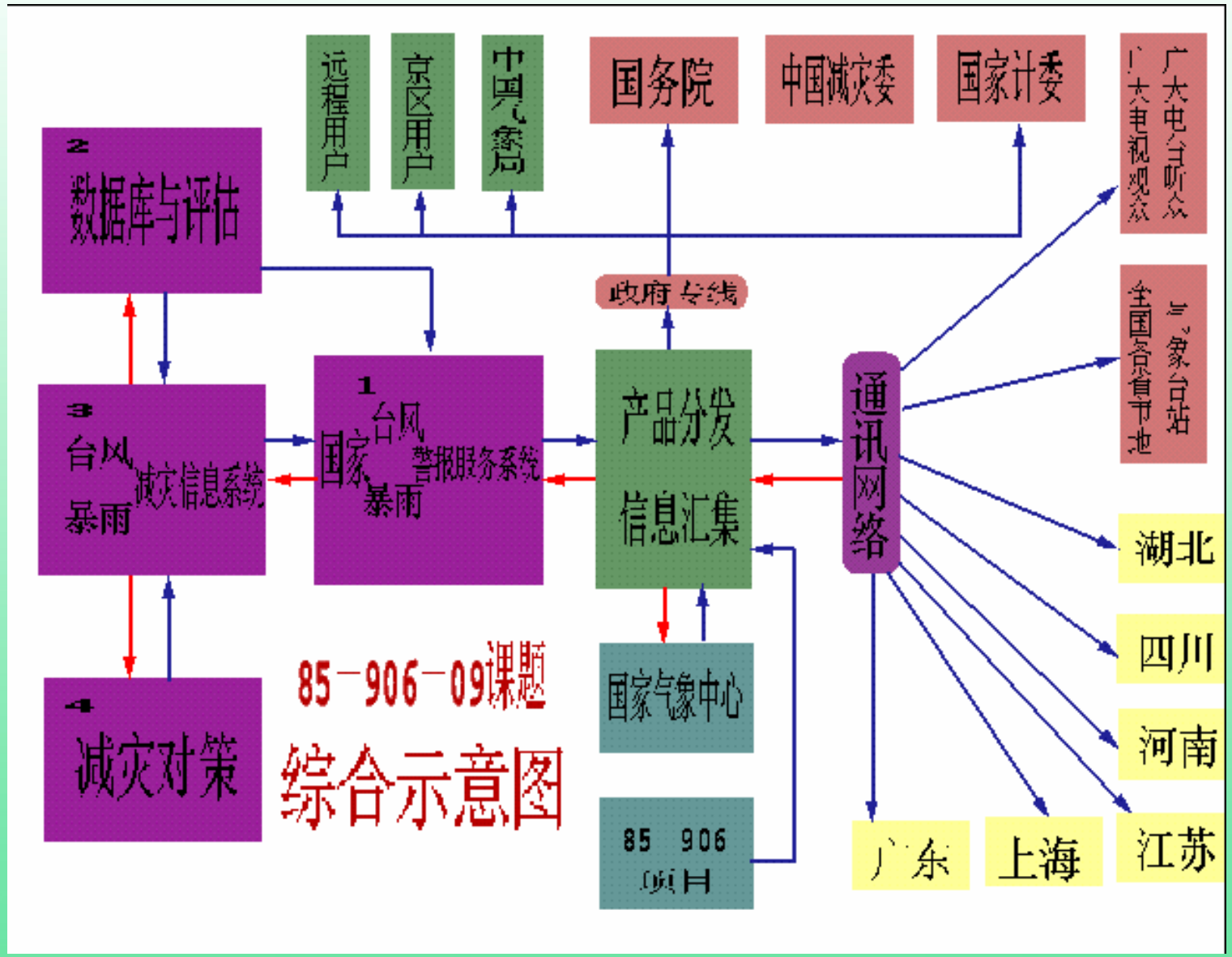
中国现代防灾减灾体系

1998

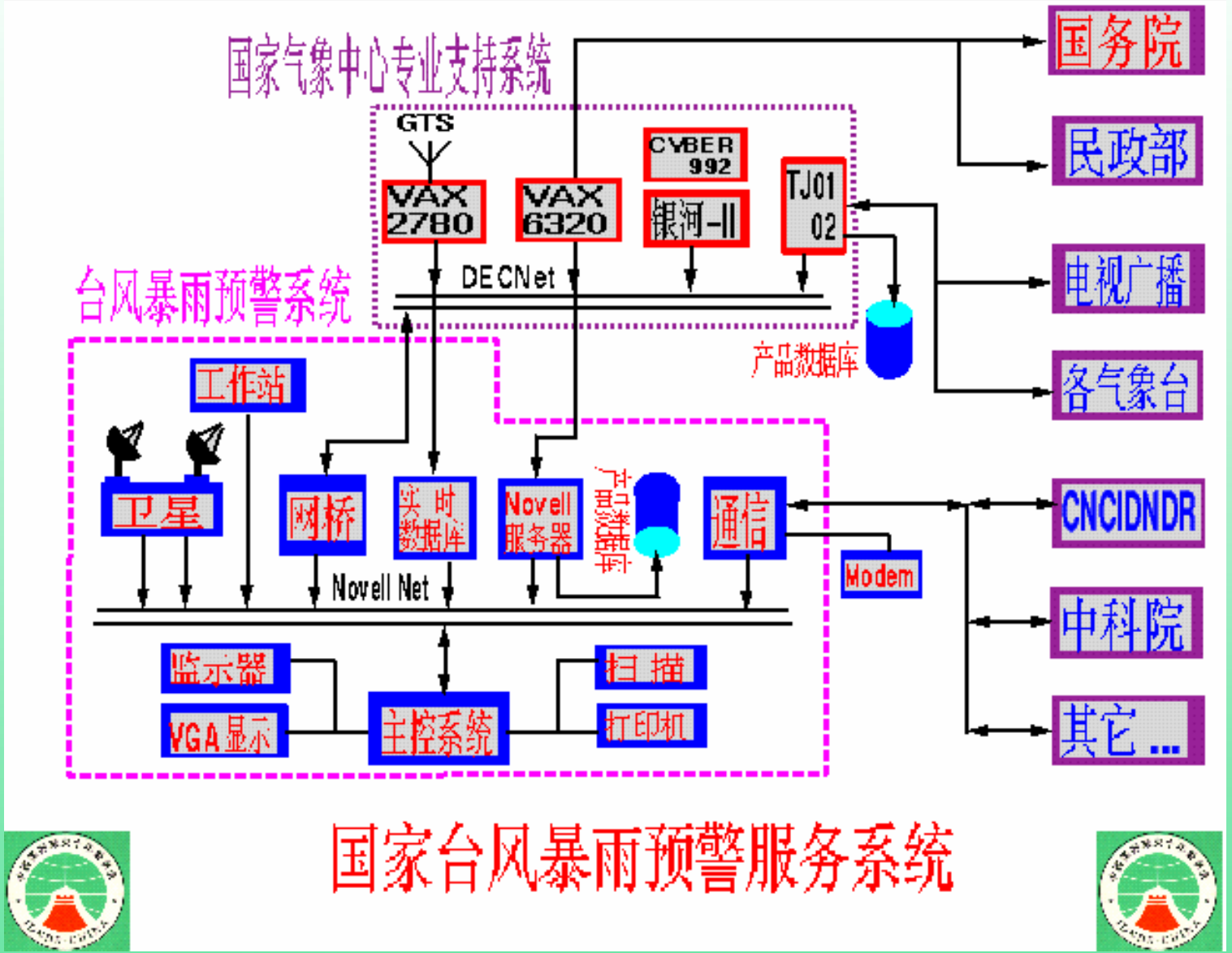
B. Disaster Reduction System for Typhoon and Heavy Rain

a. Forecasting System;
b. Warning System;
c. Information System;
d. Comprehensive Database;
e. Disaster Assessment System;
f. Local Responding System.

(一) 台风暴雨减灾示范系统

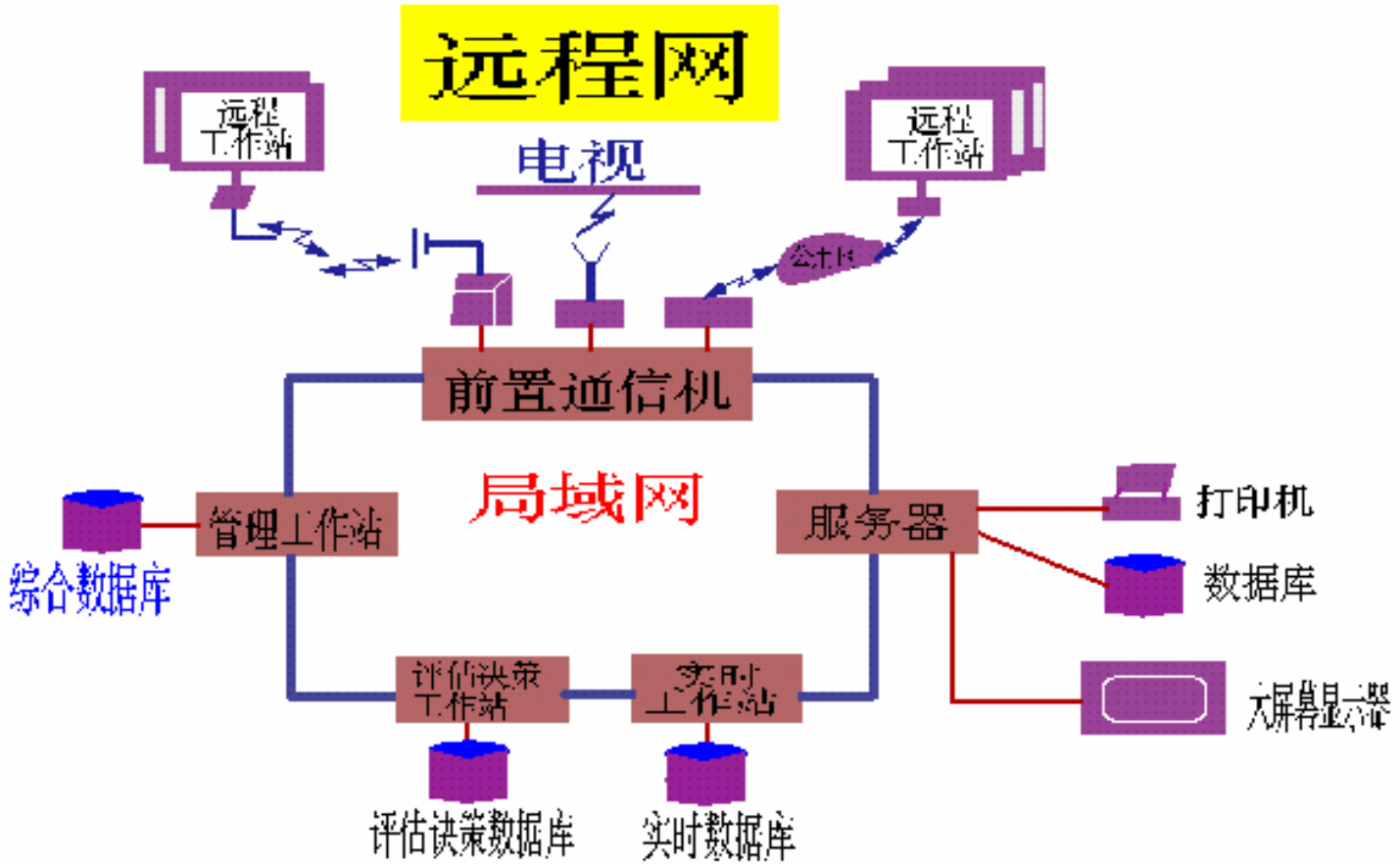


Forecasting and Warning System of Typhoon and Heavy Rain



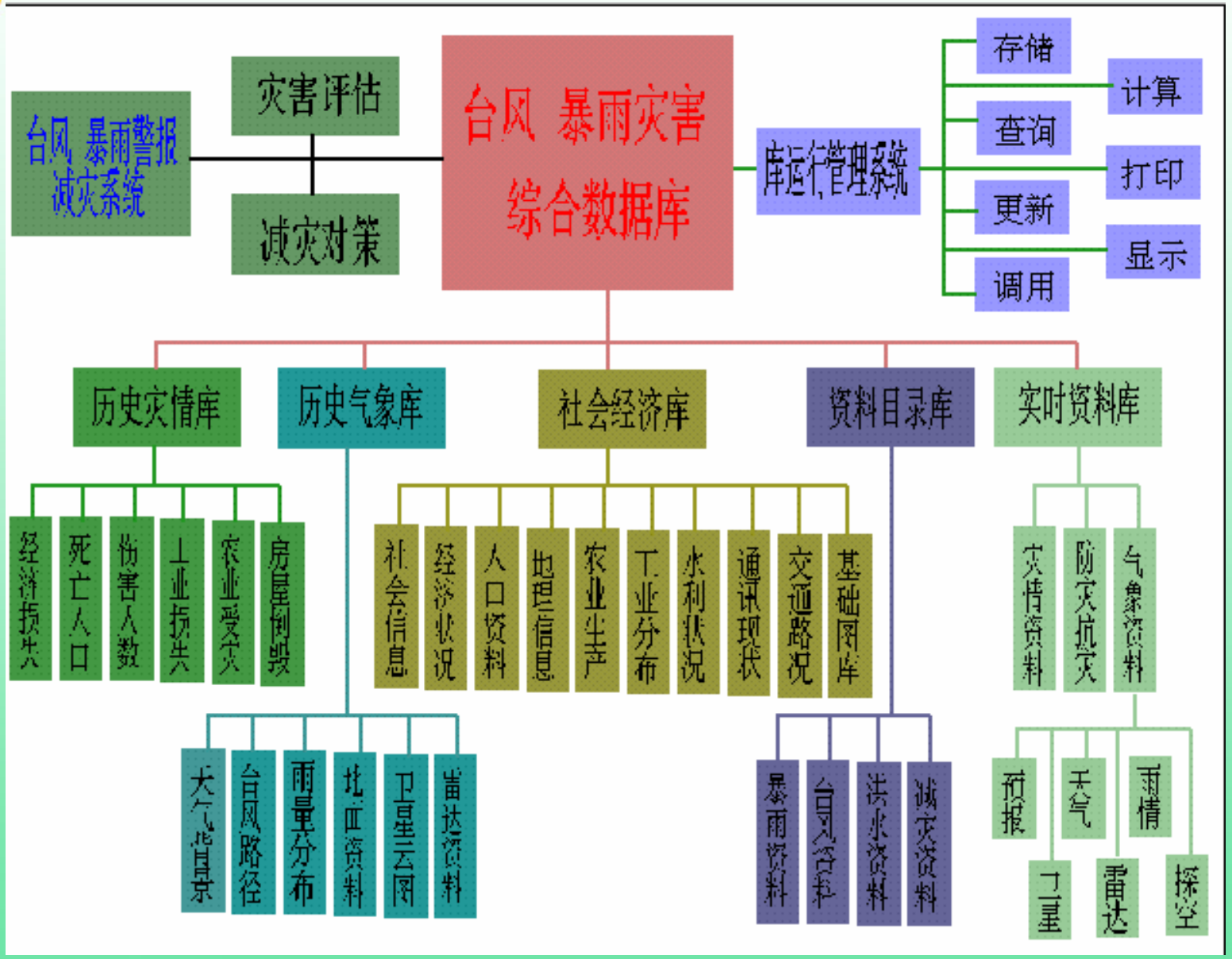
国家台风暴雨预警服务系统

Information System of Disaster Reduction



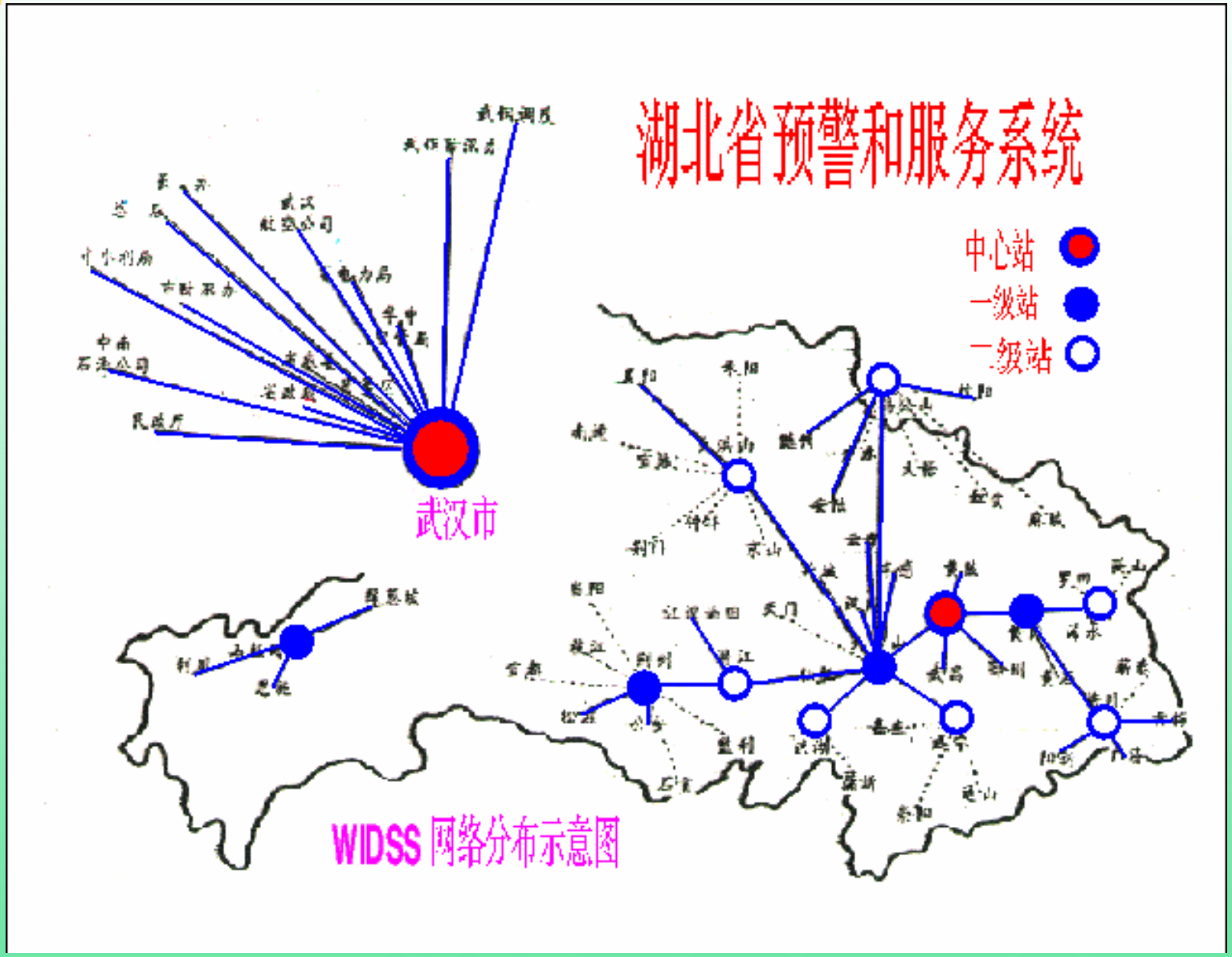
减灾信息系统

Synthetic Database of Disaster Reduction on Typhoon and Heavy Rain

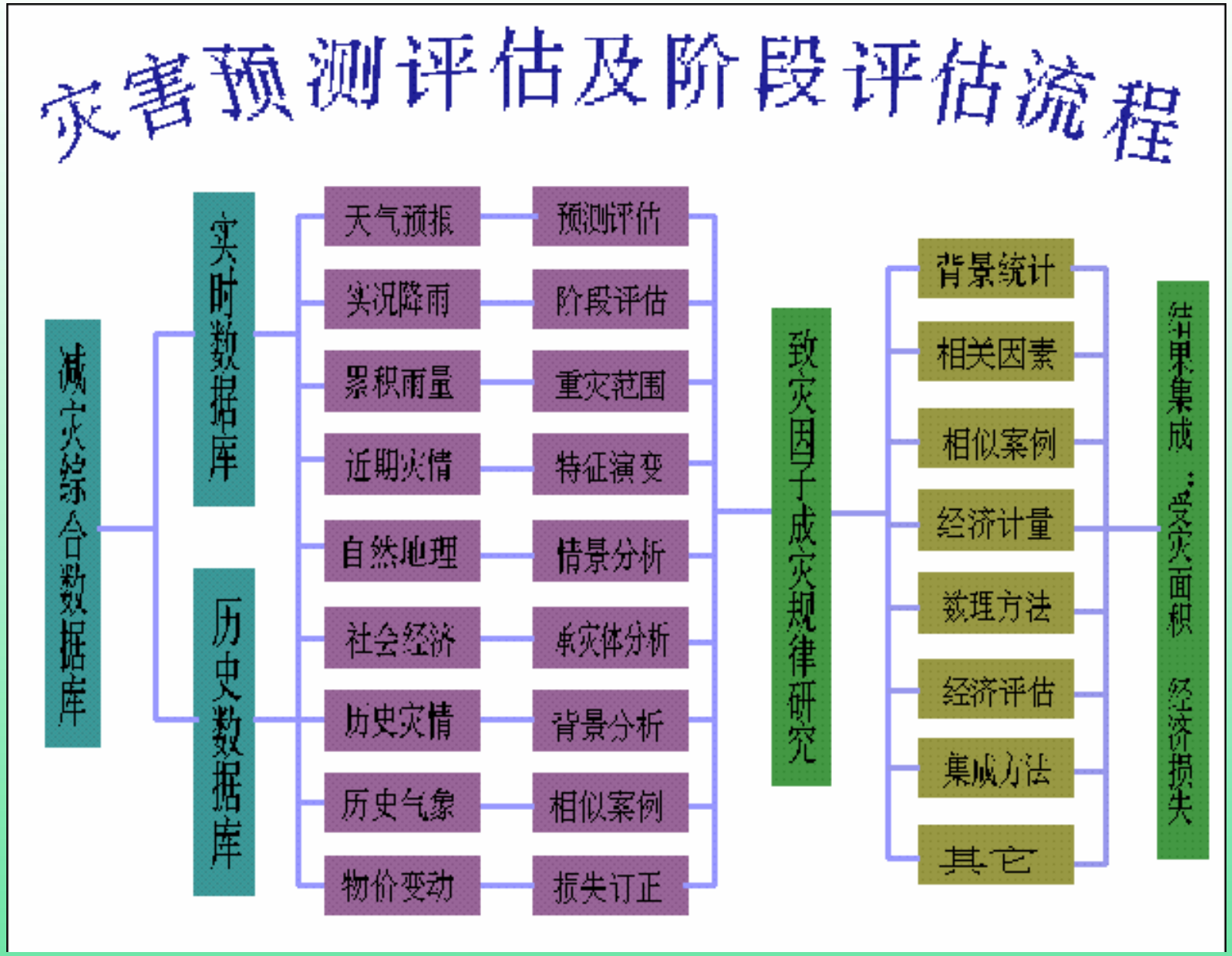


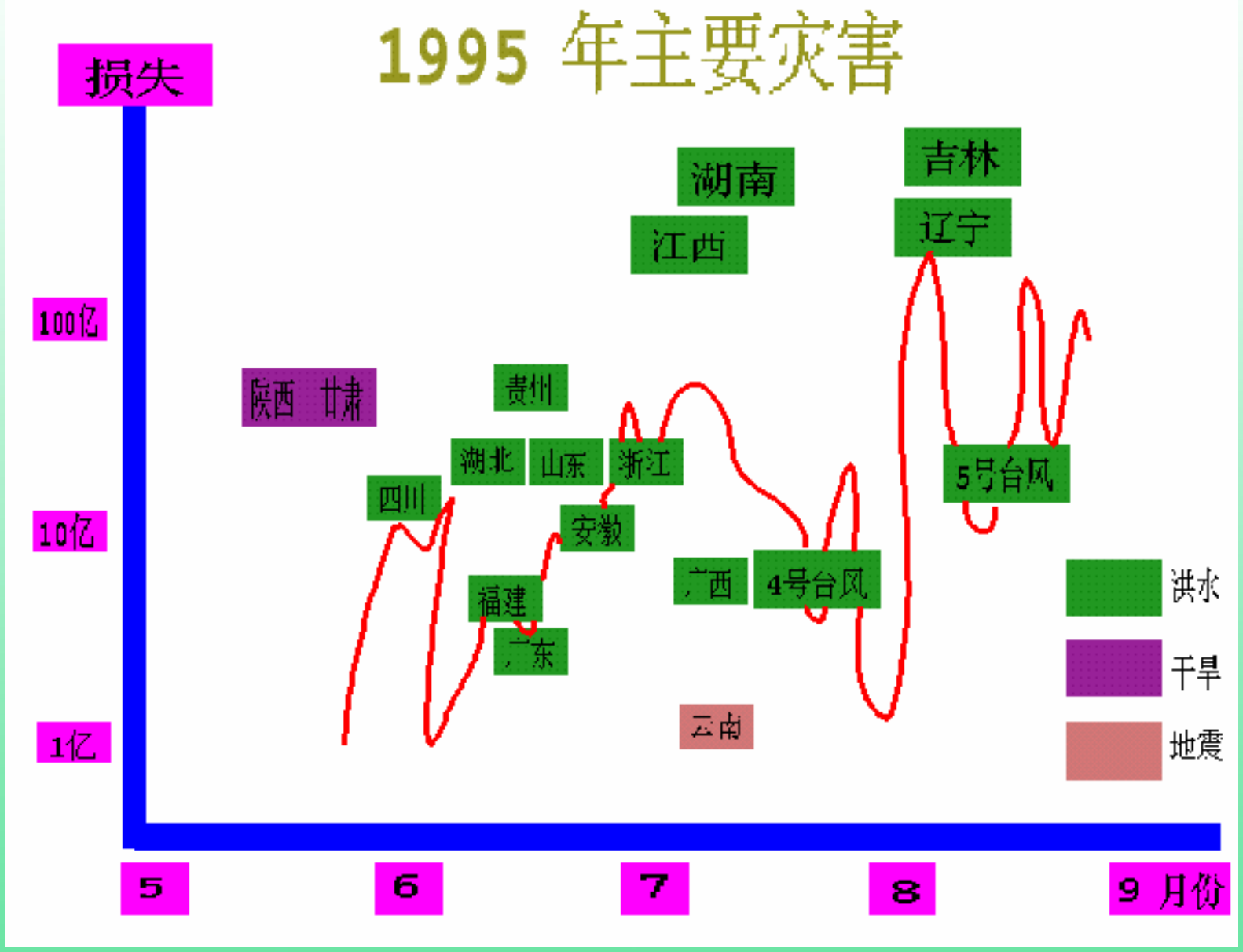
中国人口 社会 经济
地理信息系统

Local Responding System.



Disaster Assessment System




1995 年主要灾害
损失
100亿
10亿
1亿
5
6
7
8
9 月份
湖南
吉林
江西
辽宁
陕西 甘肃
贵州
湖北
山东
浙江
四川
安徽
福建
广东
广西
4号台风
5号台风
云南
洪水
干旱
地震

C. China Comprehensive Scientific System of Disaster Reduction

a. China Center of Disaster Reduction;

b. China Scientific System:

(a). Disaster background;

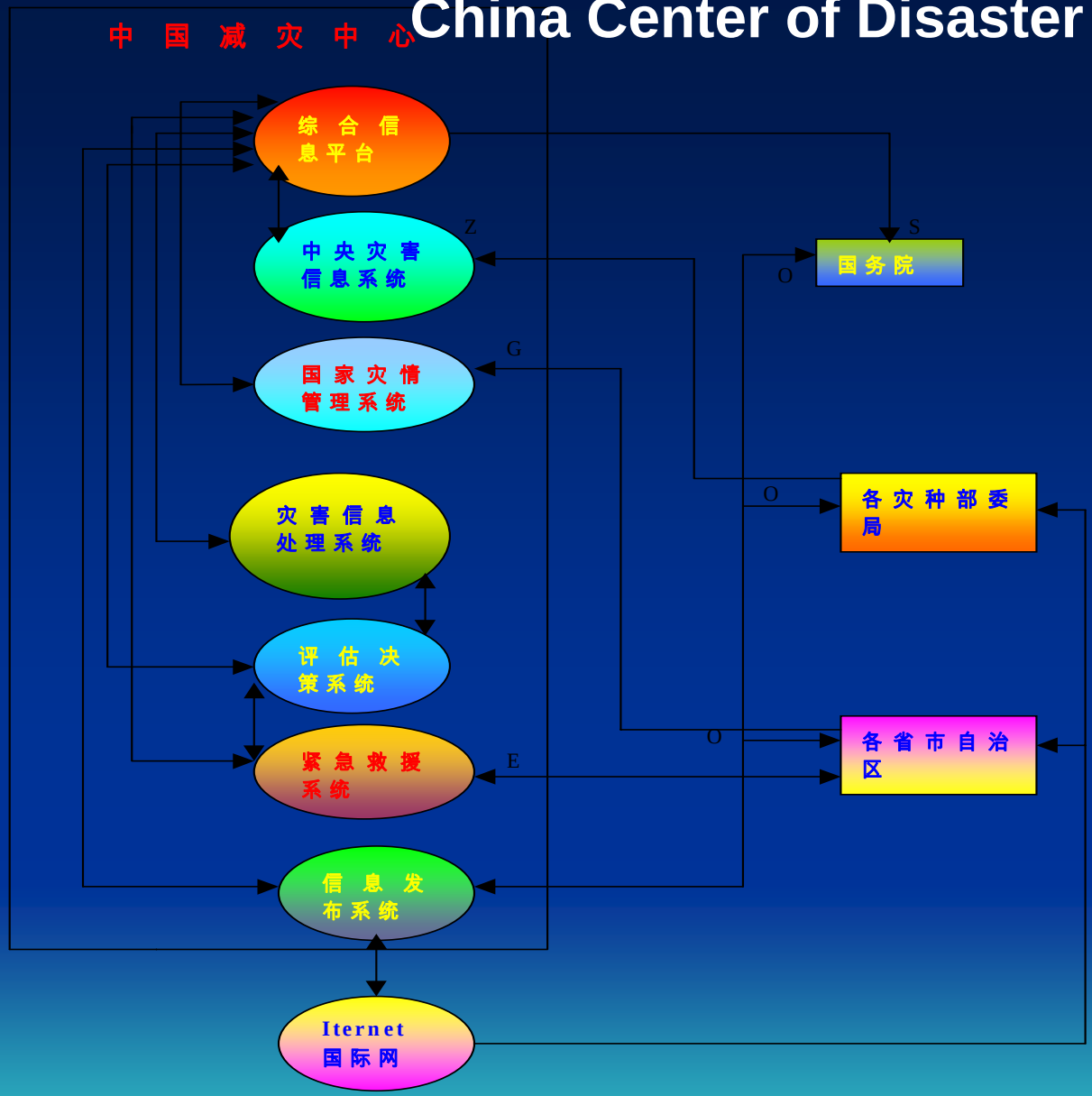
(b). The Factor which make disaster;

(c). Disaster situation;

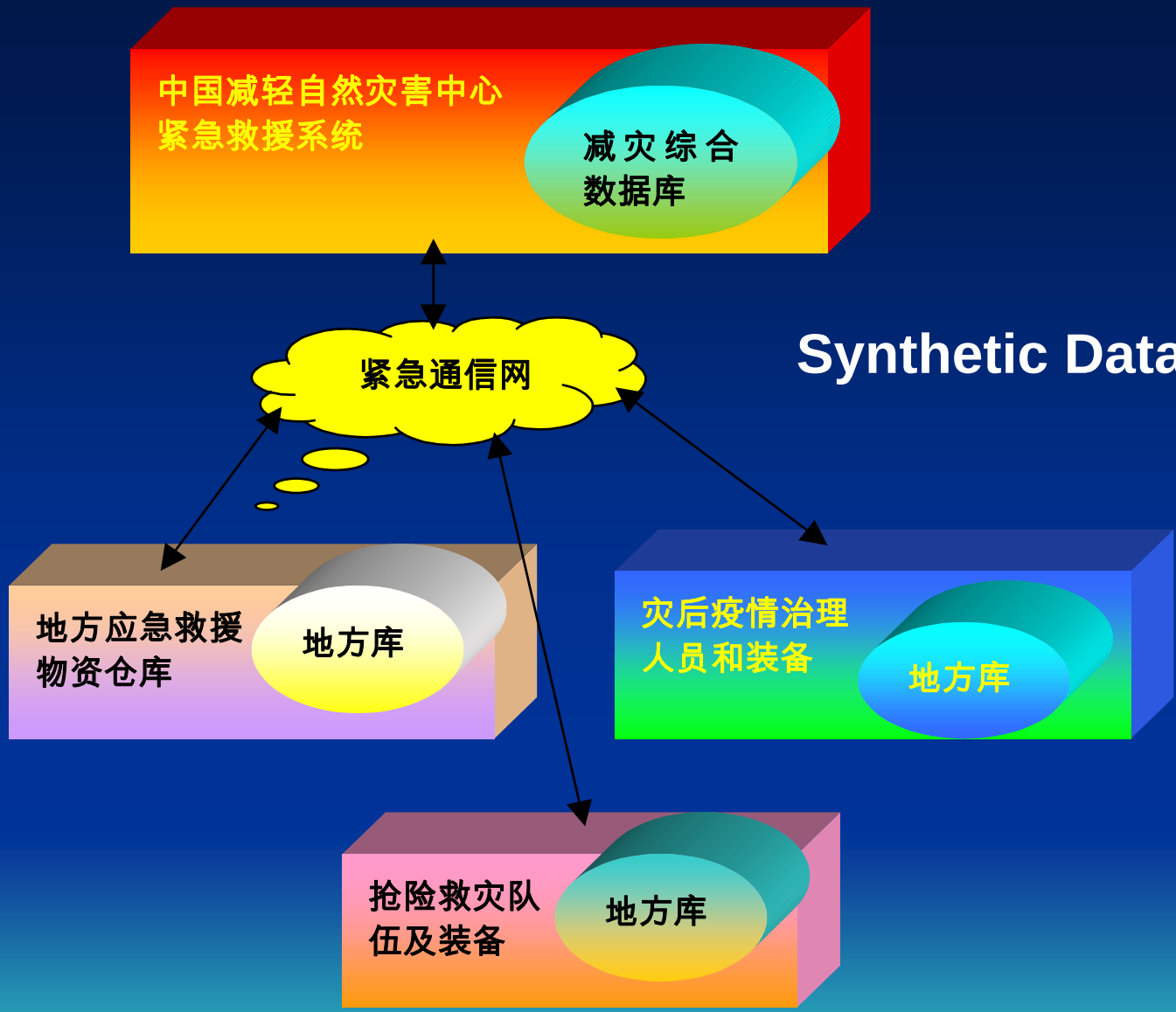
(d). Disaster assessment;

etc.

China Center of Disaster Reduction

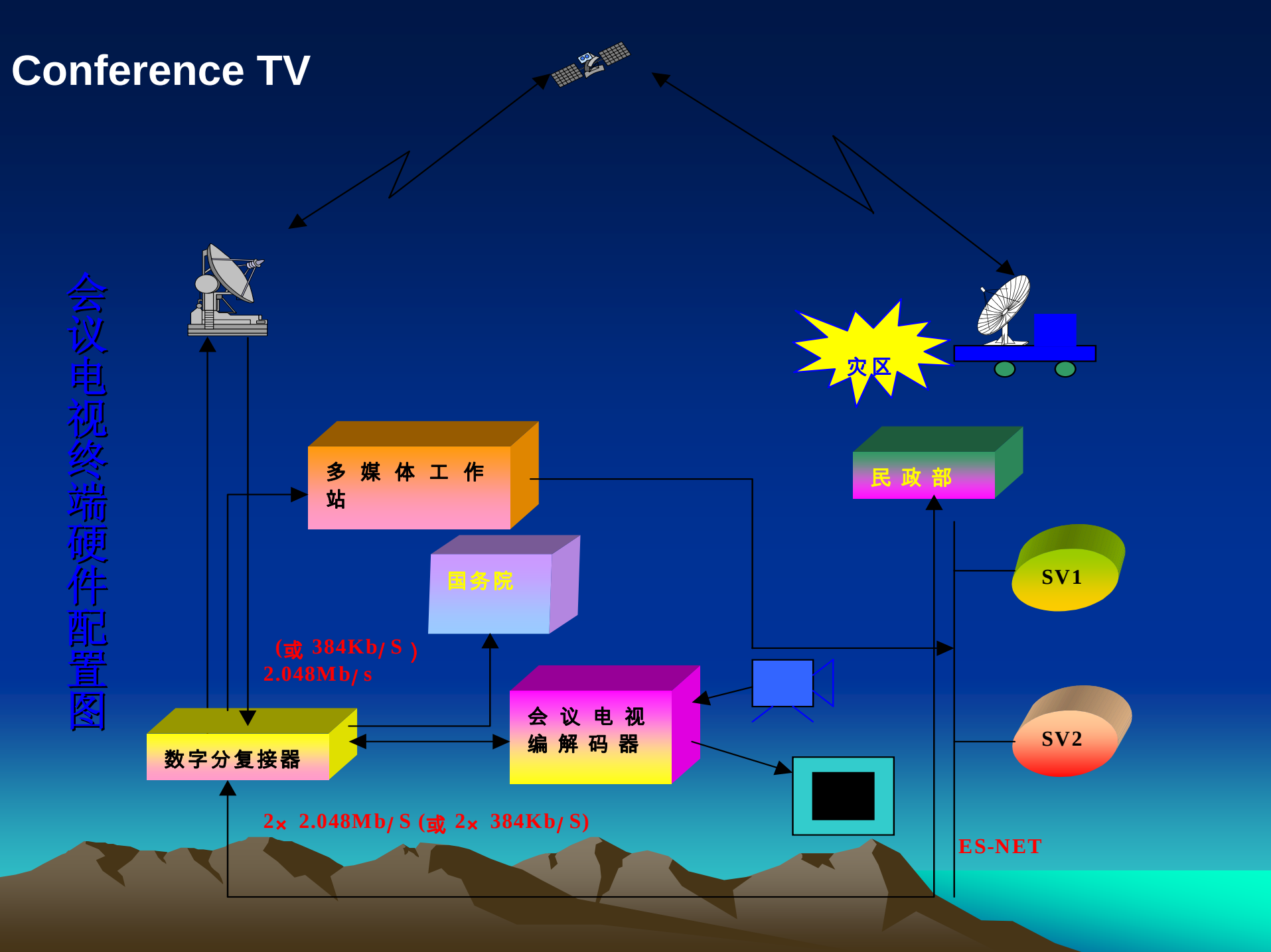


中国减灾中心各系统间和外部的信息交互关系示意图



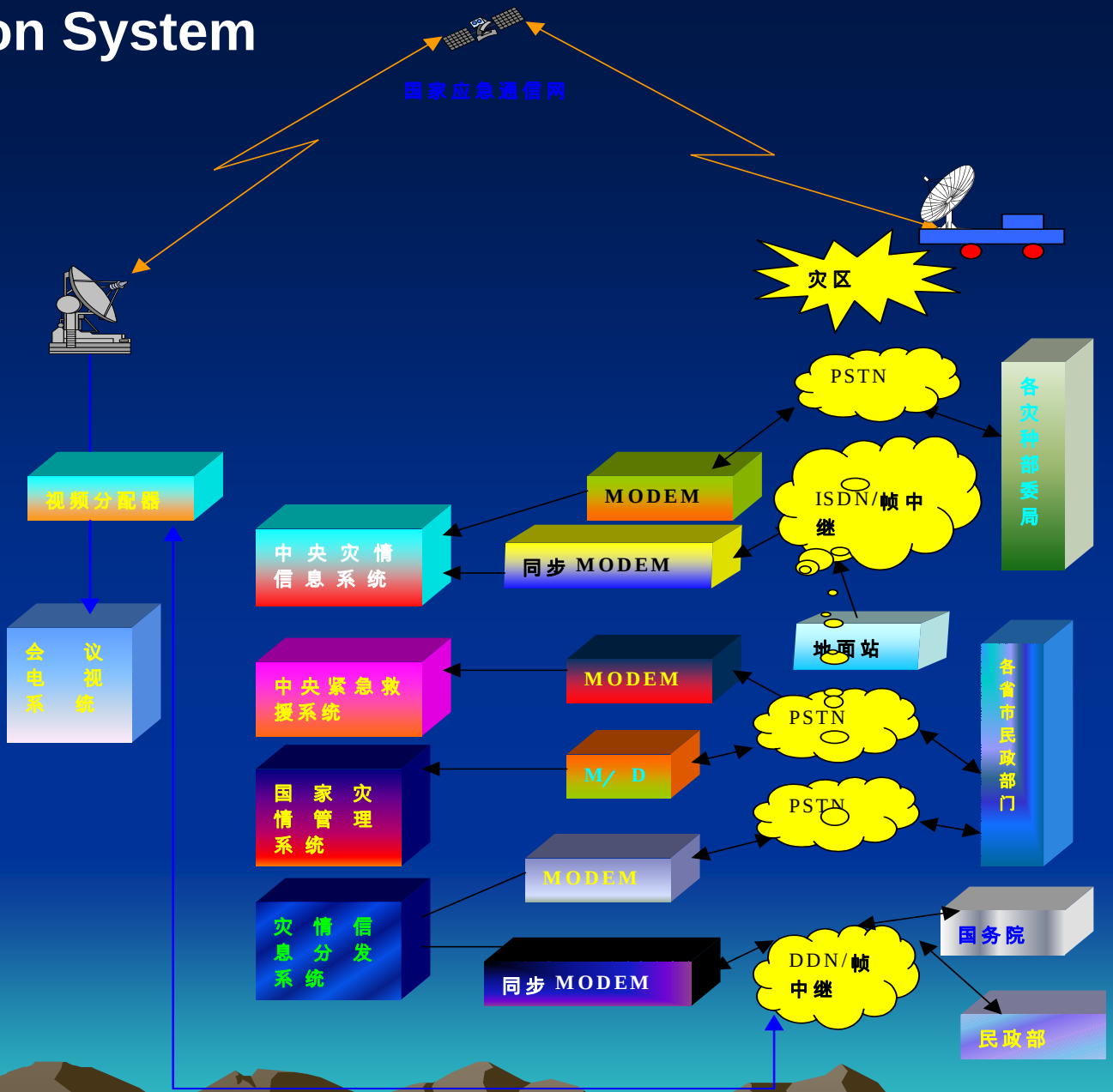
减灾综合数据库与各地方库的关系示意图

Conference TV



Information System

减灾专用通信组网示意图



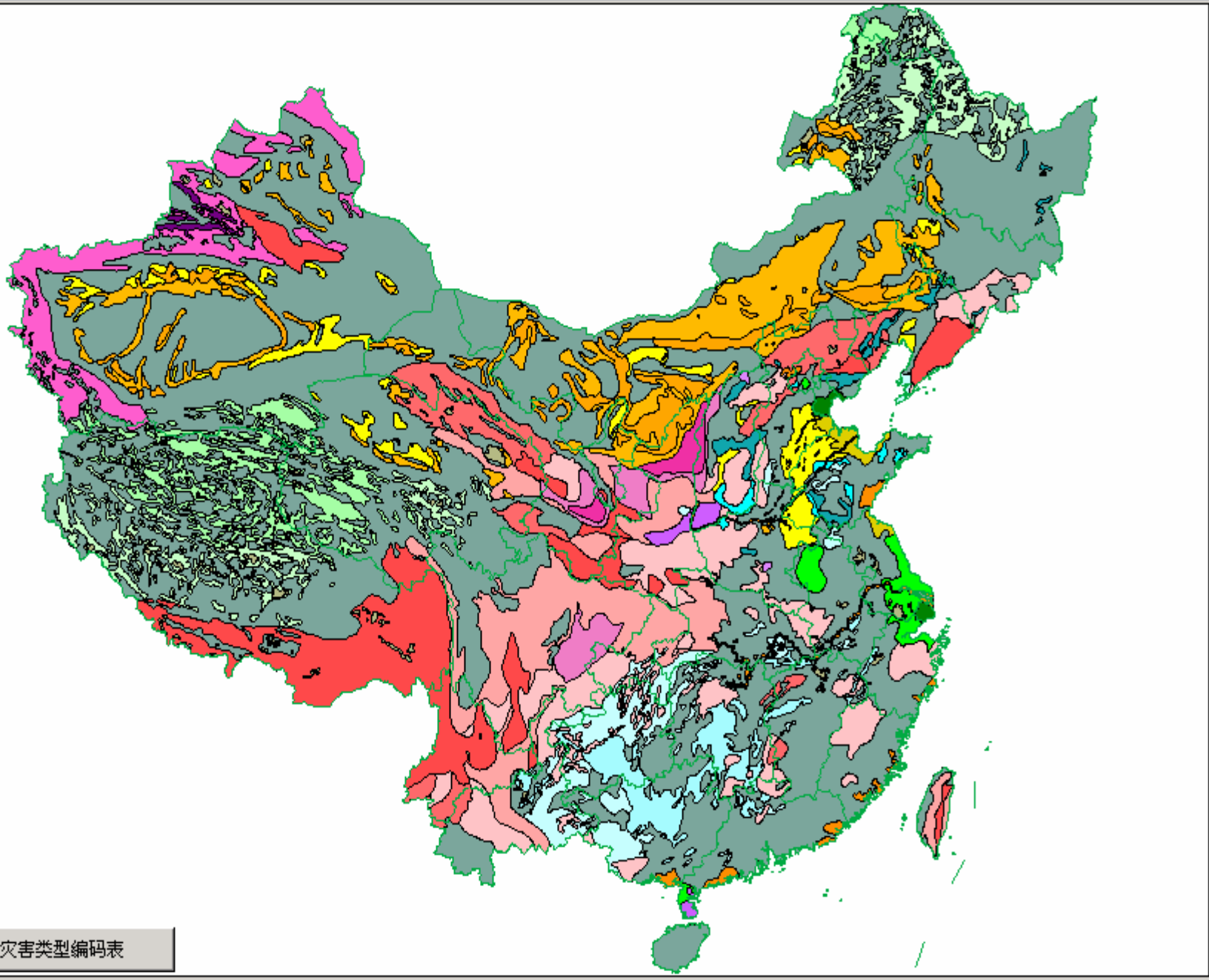
China Scientific System for Disaster Reduction

(a). Disaster background;

质灾害

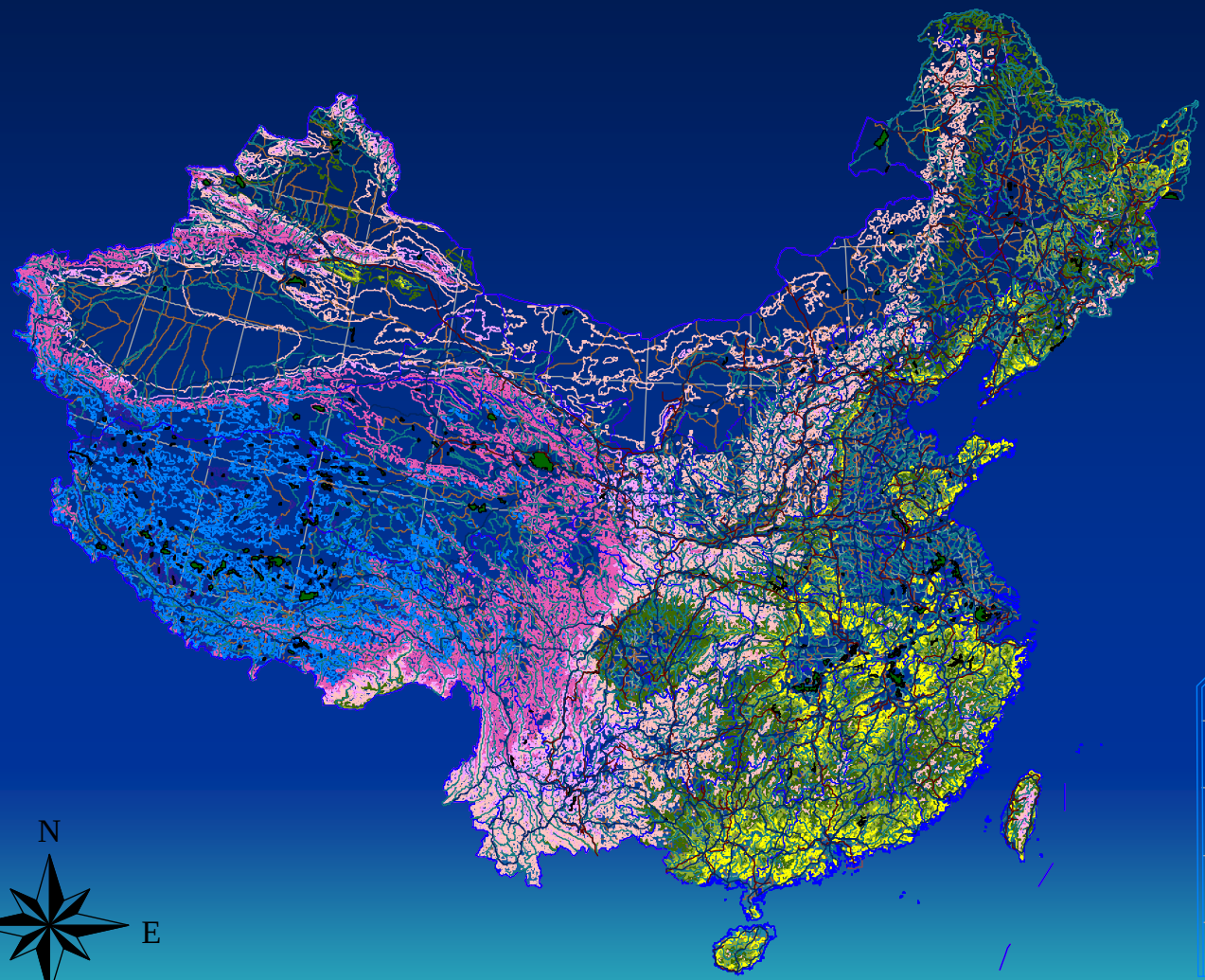
界

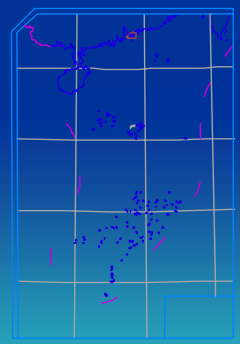
灾害分类
11崩坡，崩塌
12崩坡，崩塌
21泥石流
22泥石流
31地裂缝
32地裂缝
41崩塌
42崩塌
51水土流失
52水土流失
61冻融
62冻融
71地面沉降
72地面沉降
81岩溶塌陷
82岩溶塌陷
91矿区塌陷
92矿区塌陷
101土地盐碱化
102土地盐碱化
111土地沙漠化
112土地沙漠化
121河源座港口
131弱或不发育
999



地质灾害类型编码表

È«¹ú µØÀíÐÅ¢



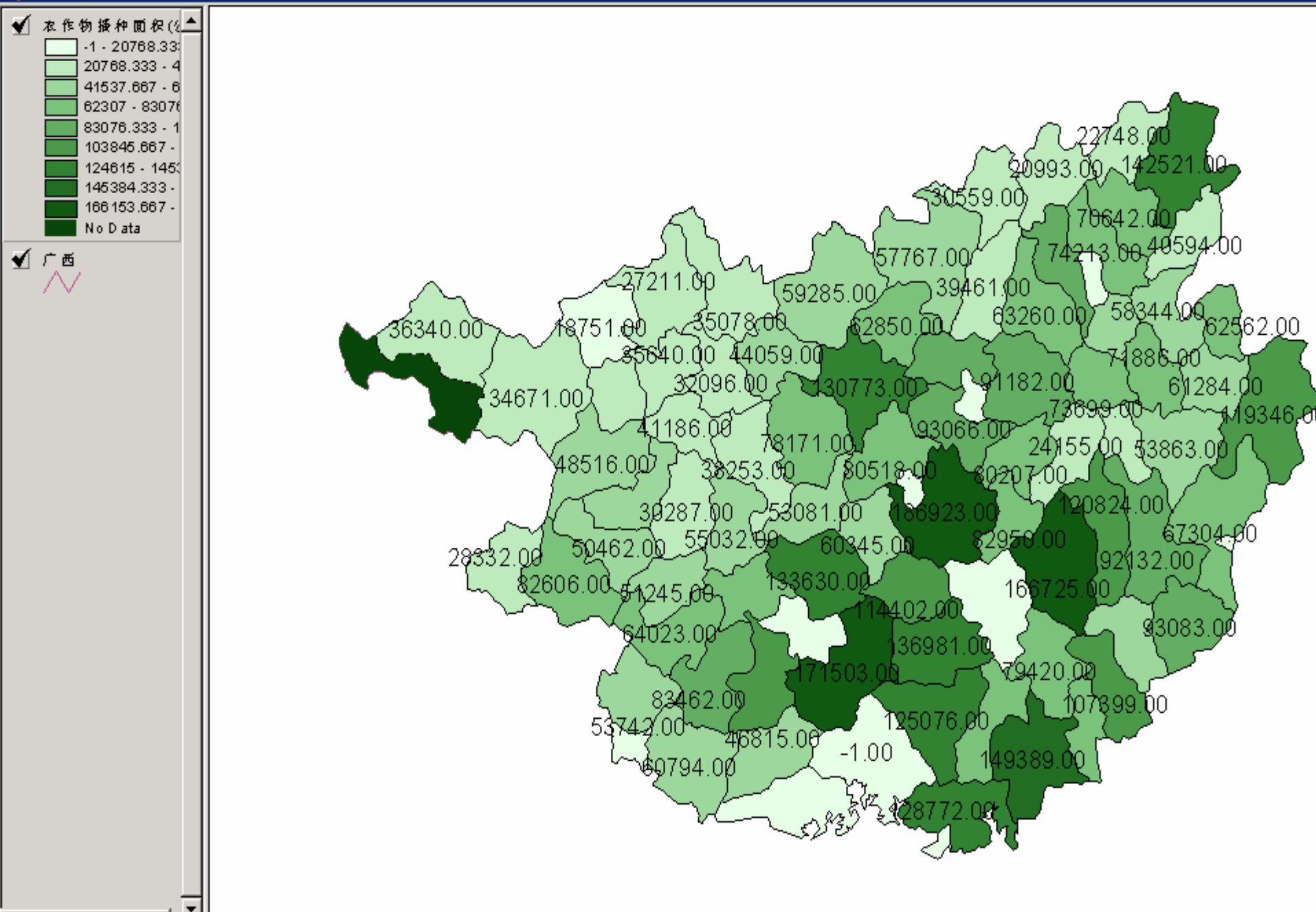


¹« Â·
Ìú Â·
°þ ²´
°ÓÁ÷
ÖÐú Ê¡ ½ç
µÈ¸ß Ïß
-100 - 200
201 - 500
501 - 1500
1501 - 2000
2001 - 4000
4001 - 5000
5001 - 7000
ÏØ ½ç
Ê¡ ½ç
ÏØ ½ç
µØÊÐÖÝ½ç
(ÒÑ¶¨)Â½ç
(Â½Ëï)°Ó½ç
°ÓÁ÷±êÏß °Ó½ç
Î´ ¶¨ ¹ú ½ç
Ïã ¸ÛµØÇø
°£ °¶ Ïß ¼°µº Óì½ø
ÓÐú ¹ú ½ç
(ÒÑ¶¨)Â½ç
(Â½Ëï)°Ó½ç
°ÓÁ÷±êÏß °Ó½ç
Î´ ¶¨ ¹ú ½ç
Ïã ¸ÛµØÇø½ø
°£ °¶ Ïß ¼°µº Óì½ø
ÖÐú ÄÏ°£ ½ø
¾Î³ Íø

N
W
E
S

600 0 600 1200 Miles

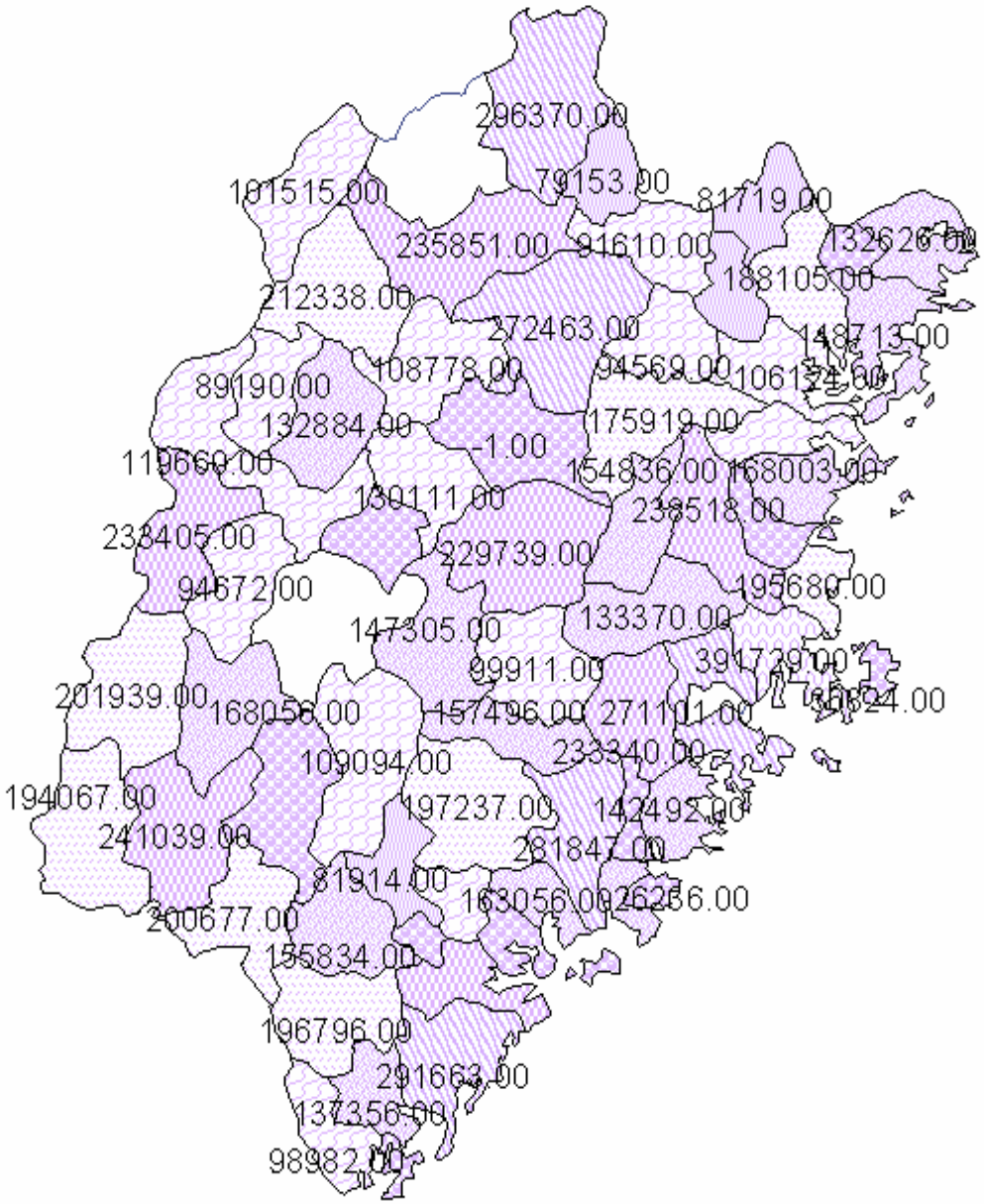
广西社会经济信息


农作物播种面积(
-1 - 20768.33
20768.333 - 4
41537.667 - 6
62307 - 83076
83076.333 - 1
103845.667 -
124615 - 145
145384.333 -
166153.667 -
No Data
广西
22748.00
20993.00
142521.00
30559.00
70642.00
74213.00
40594.00
57767.00
27211.00
59285.00
39461.00
63260.00
58344.00
62562.00
36340.00
18751.00
35078.00
62850.00
35640.00
44059.00
74886.00
32096.00
130773.00
91182.00
61284.00
34671.00
73699.00
119346.00
41186.00
78171.00
93066.00
24155.00
53863.00
48516.00
38253.00
80518.00
60207.00
39287.00
53081.00
186923.00
120824.00
67304.00
28332.00
50462.00
55032.00
60345.00
82950.00
92132.00
82606.00
51245.00
133630.00
166725.00
114402.00
64023.00
93083.00
136981.00
171503.00
79420.00
83462.00
107399.00
53742.00
125076.00
46815.00
-1.00
60794.00
149389.00
128772.00

福建省社会经济信息

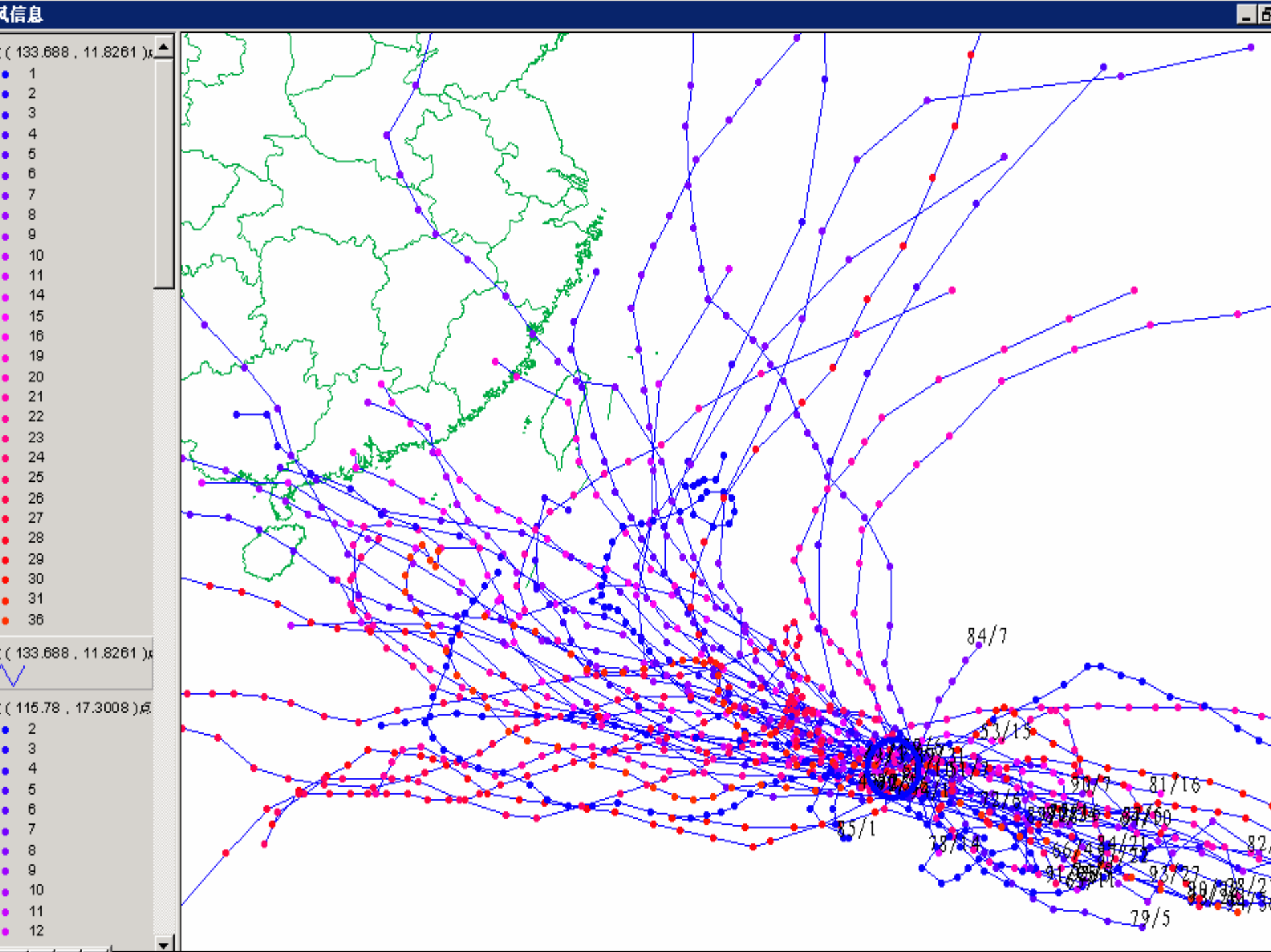
粮食总产量(吨)
-1 - 43524.55
43524.556 - 8
87050.111 - 1
130575.667 -
174101.222 -
217626.778 -
261152.333 -
304677.889 -
348203.444 -
No Data

福建

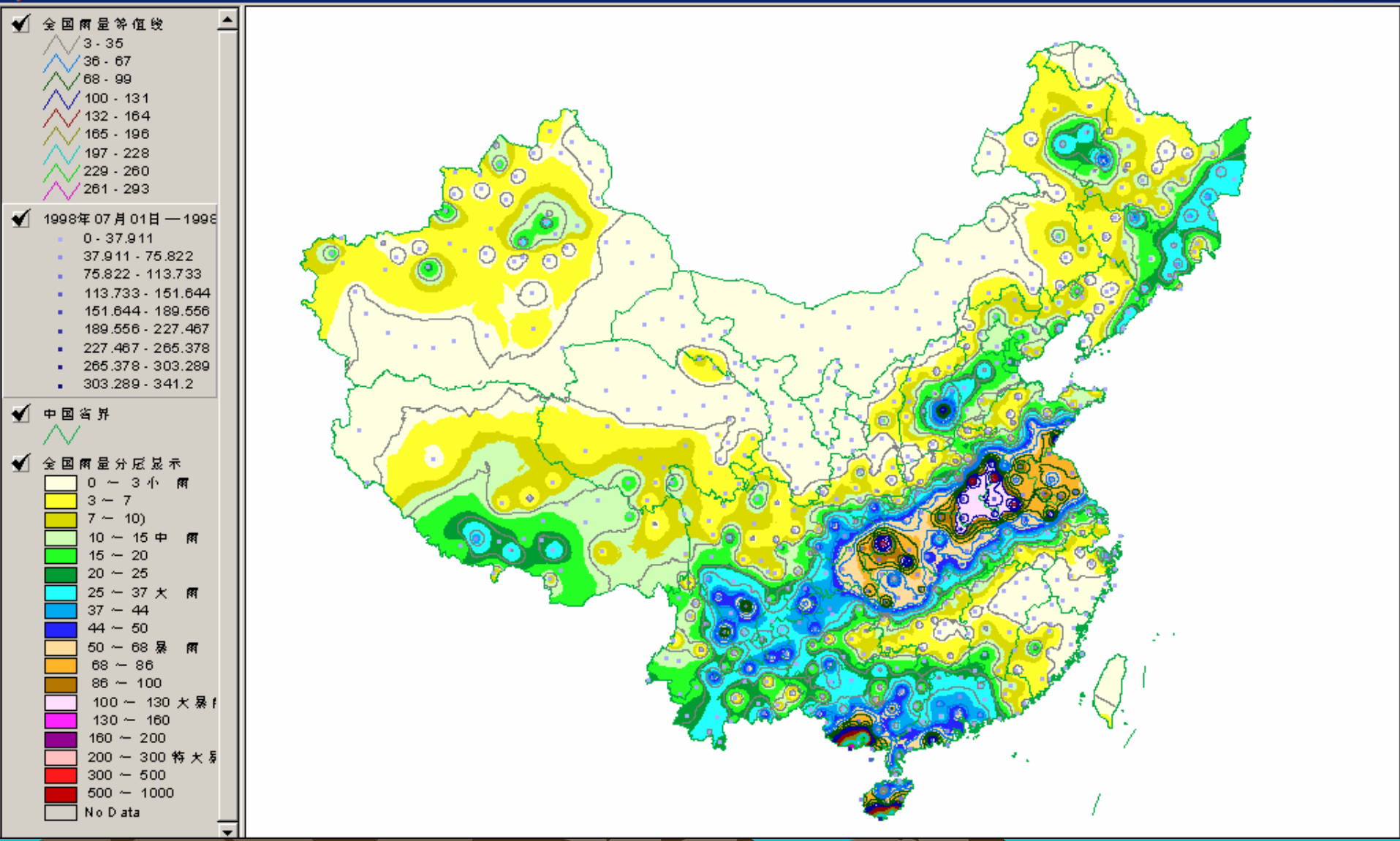


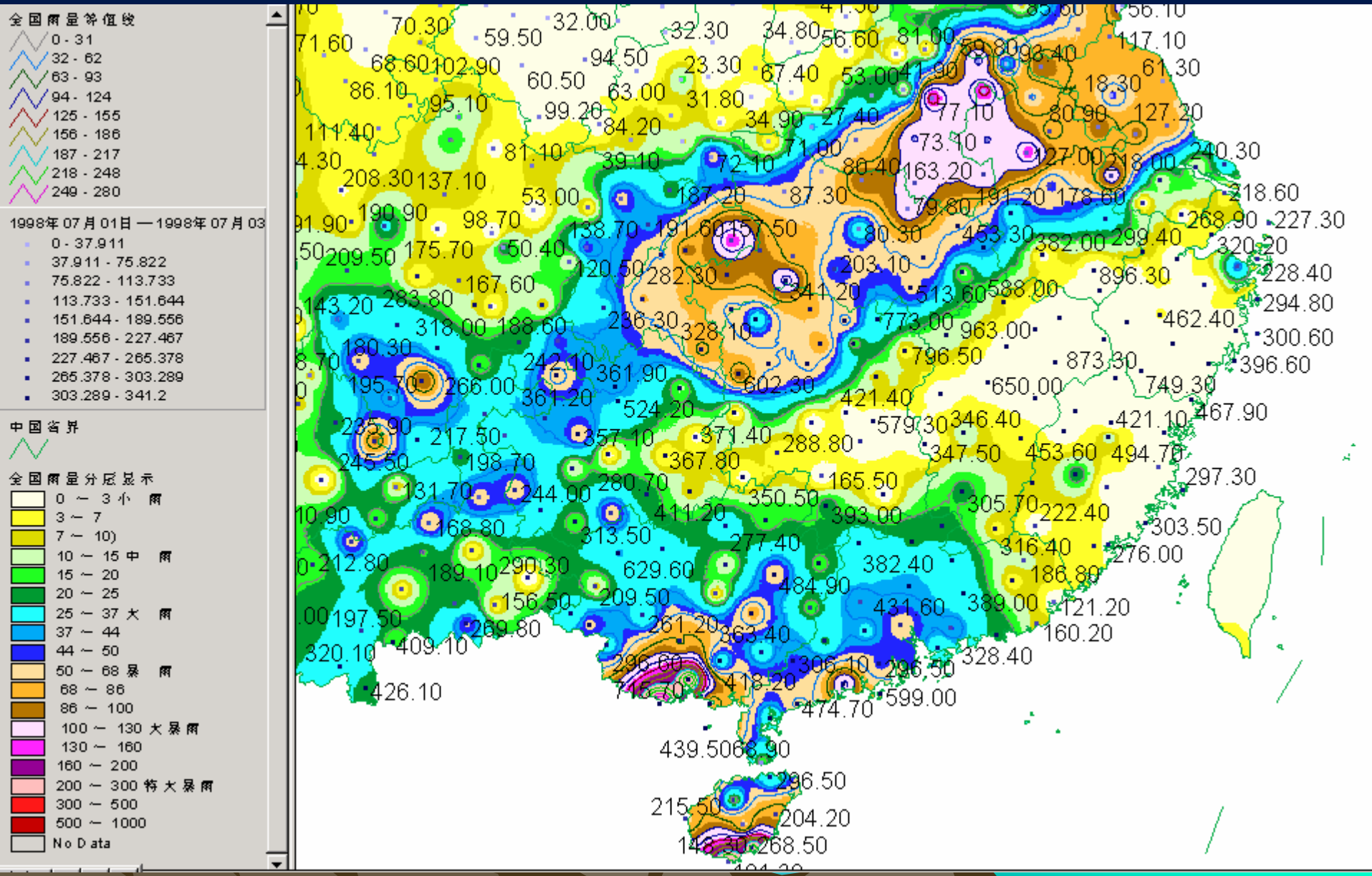
全拼

(b). The Factor which make disaster;

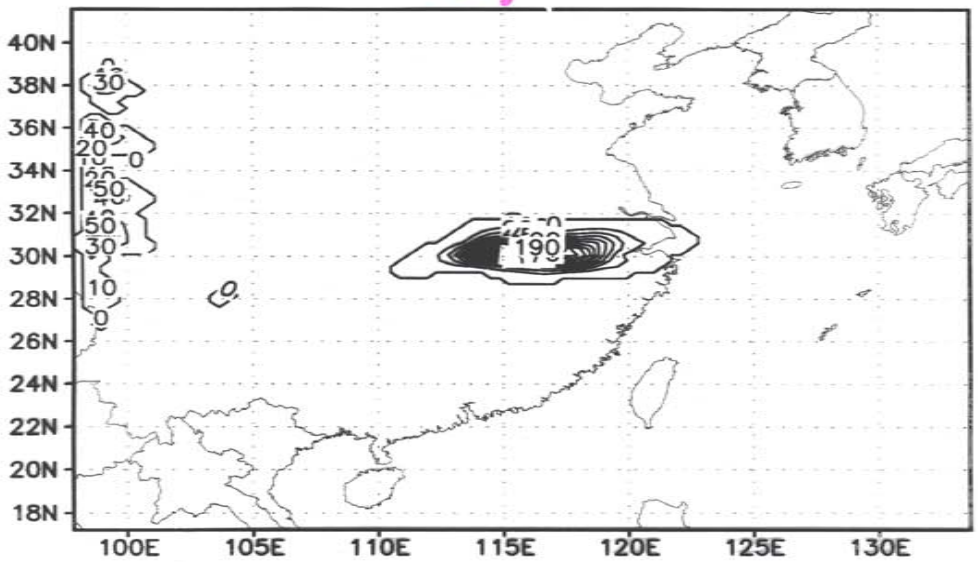

风信息
(133.688 , 11.8261)
1
2
3
4
5
6
7
8
9
10
11
14
15
16
19
20
21
22
23
24
25
26
27
28
29
30
31
36
(133.688 , 11.8261)
(115.78 , 17.3008)
2
3
4
5
6
7
8
9
10
11
12
84/7
81/16
79/5

雨量信息

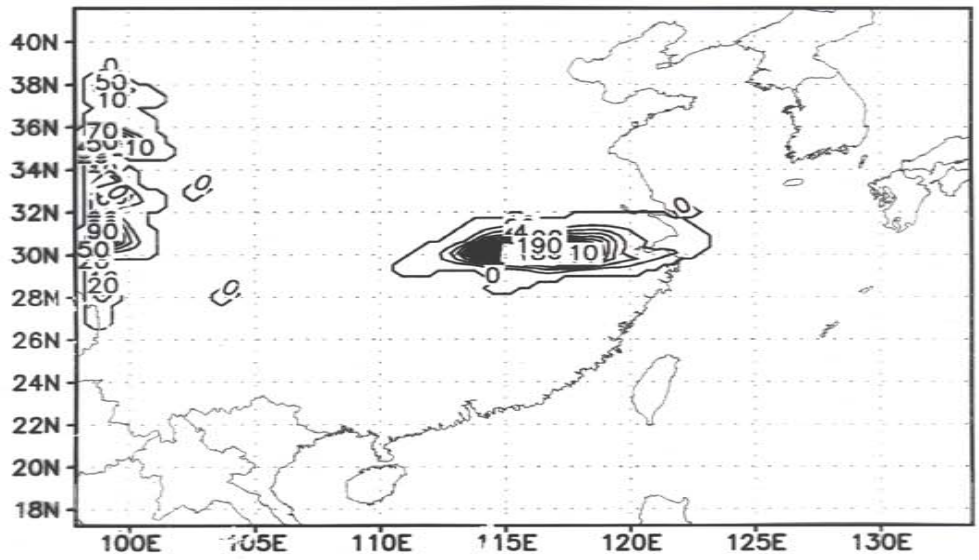

全国雨量等值线
3 - 35
36 - 67
68 - 99
100 - 131
132 - 164
165 - 196
197 - 228
229 - 260
261 - 293
1998年07月01日 — 1998
0 - 37.911
37.911 - 75.822
75.822 - 113.733
113.733 - 151.644
151.644 - 189.556
189.556 - 227.467
227.467 - 265.378
265.378 - 303.289
303.289 - 341.2
中国省界
全国雨量分层显示
0 ～ 3 小 雨
3 ～ 7
7 ～ 10)
10 ～ 15 中 雨
15 ～ 20
20 ～ 25
25 ～ 37 大 雨
37 ～ 44
44 ～ 50
50 ～ 68 暴 雨
68 ～ 86
86 ～ 100
100 ～ 130 大暴
130 ～ 160
160 ～ 200
200 ～ 300 特大暴
300 ～ 500
500 ～ 1000
No Data

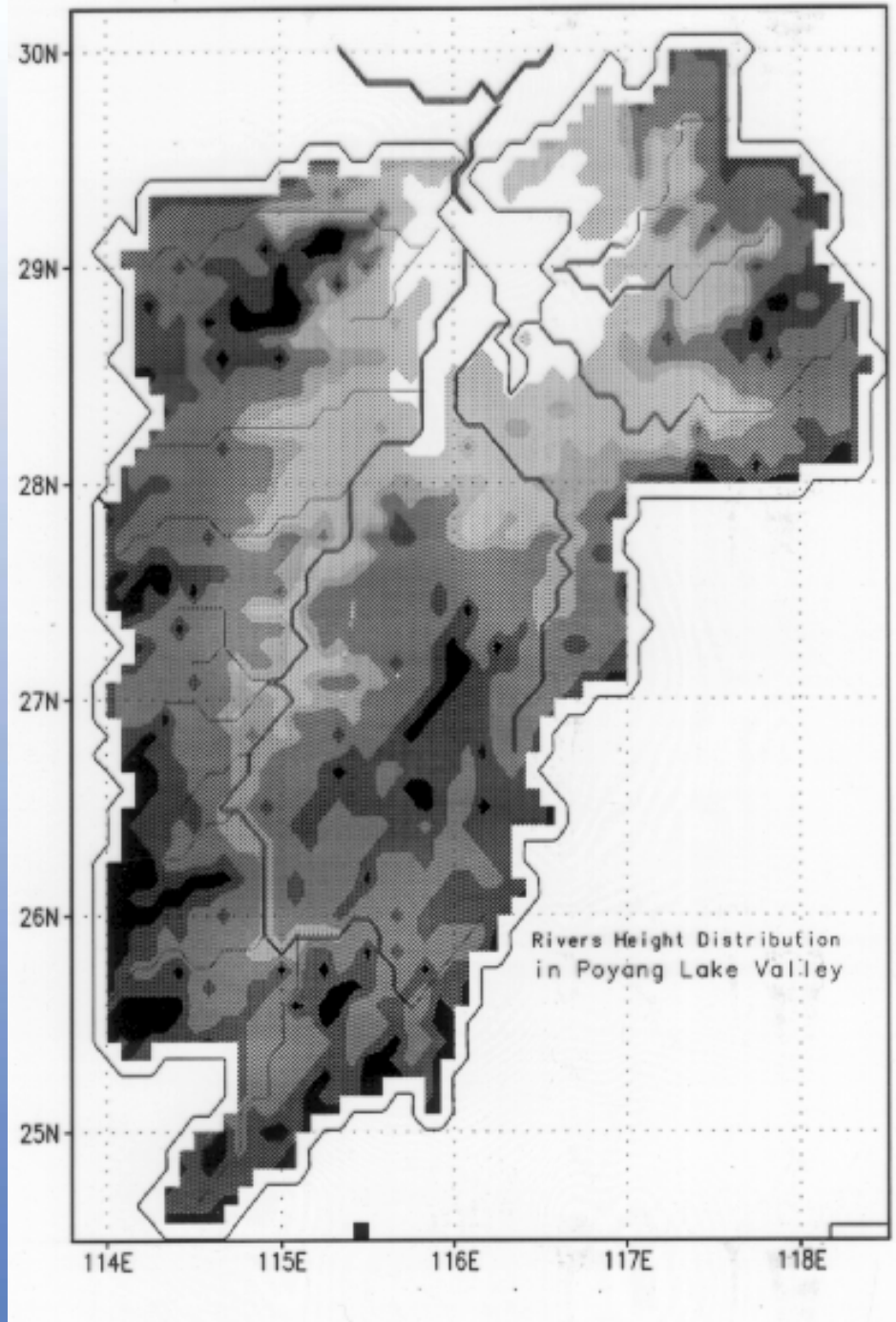

全国雨量等值线
0 - 31
32 - 62
63 - 93
94 - 124
125 - 155
156 - 186
187 - 217
218 - 248
249 - 280
1998年07月01日 — 1998年07月03
0 - 37.911
37.911 - 75.822
75.822 - 113.733
113.733 - 151.644
151.644 - 189.556
189.556 - 227.467
227.467 - 265.378
265.378 - 303.289
303.289 - 341.2
中国省界
全国雨量分层显示
0 — 3 小 雨
3 — 7
7 — 10)
10 — 15 中 雨
15 — 20
20 — 25
25 — 37 大 雨
37 — 44
44 — 50
50 — 68 暴 雨
68 — 86
86 — 100
100 — 130 大暴雨
130 — 160
160 — 200
200 — 300 特大暴雨
300 — 500
500 — 1000
No Data

+9


40N
38N
36N
34N
32N
30N
28N
26N
24N
22N
20N
18N
100E
105E
110E
115E
120E
125E
130E
30
40
20
0
50
50
30
10
0
190

+12

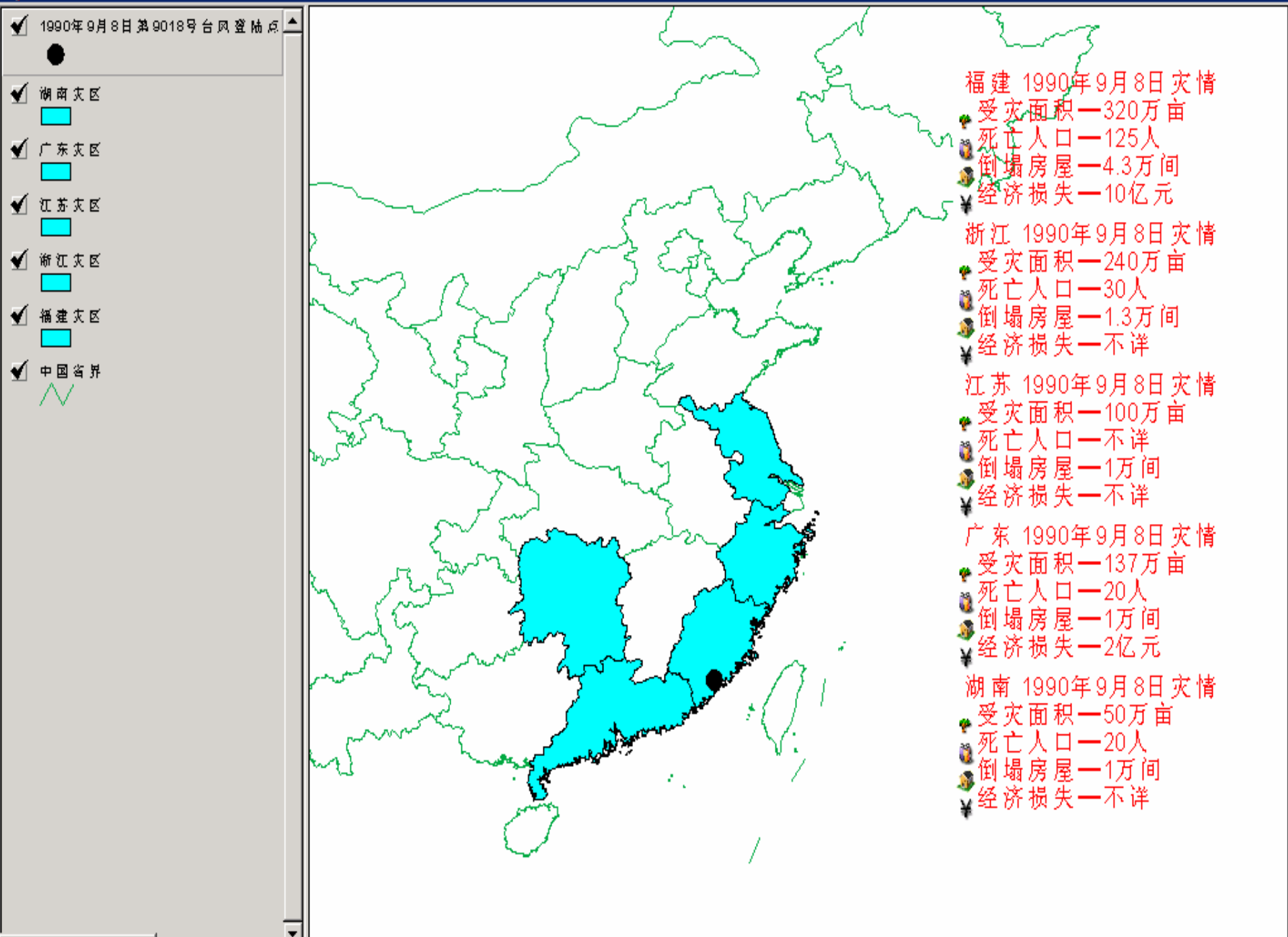

40N
38N
36N
34N
32N
30N
28N
26N
24N
22N
20N
18N
100E
105E
110E
115E
120E
125E
130E
50
10
70
10
90
50
20
190
10
0


30N
29N
28N
27N
26N
25N
114E
115E
116E
117E
118E
Rivers Height Distribution
in Poyang Lake Valley

鄱阳湖流域水位分布

- **(c). Disaster situation;**

台风灾害


1990年9月8日第9018号台风登陆点
湖南灾区
广东灾区
江苏灾区
浙江灾区
福建灾区
中国省界
福建 1990年9月8日灾情
受灾面积—320万亩
死亡人口—125人
倒塌房屋—4.3万间
经济损失—10亿元
浙江 1990年9月8日灾情
受灾面积—240万亩
死亡人口—30人
倒塌房屋—1.3万间
经济损失—不详
江苏 1990年9月8日灾情
受灾面积—100万亩
死亡人口—不详
倒塌房屋—1万间
经济损失—不详
广东 1990年9月8日灾情
受灾面积—137万亩
死亡人口—20人
倒塌房屋—1万间
经济损失—2亿元
湖南 1990年9月8日灾情
受灾面积—50万亩
死亡人口—20人
倒塌房屋—1万间
经济损失—不详

浙江省

中国省界

1995年04月16日至04月18日浙江省风雹灾害灾情

死亡人口—13人

受灾面积—73.5万亩

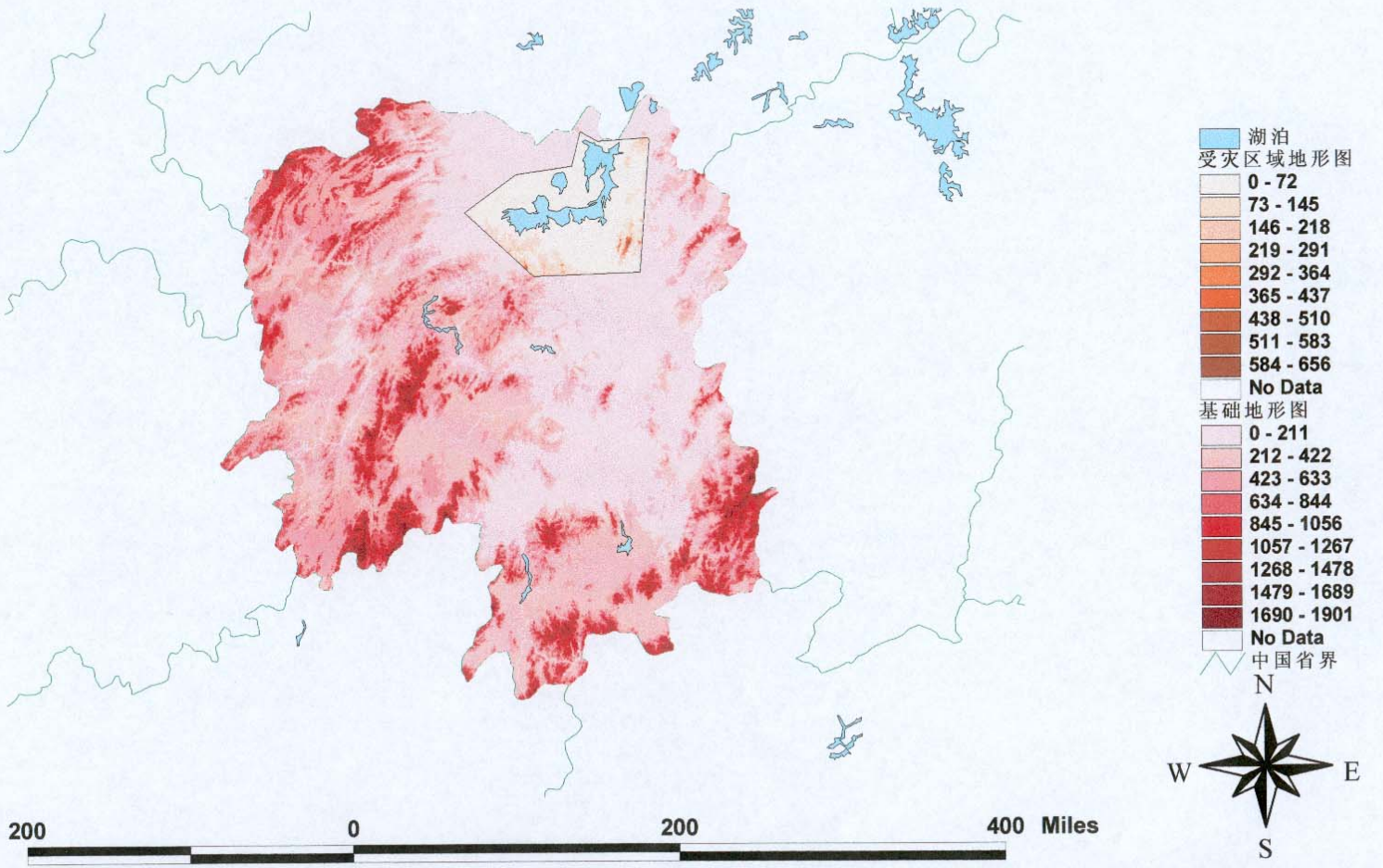
倒塌房屋—1311万间

直接经济损失—7.9亿元

(d). Disaster assessment;

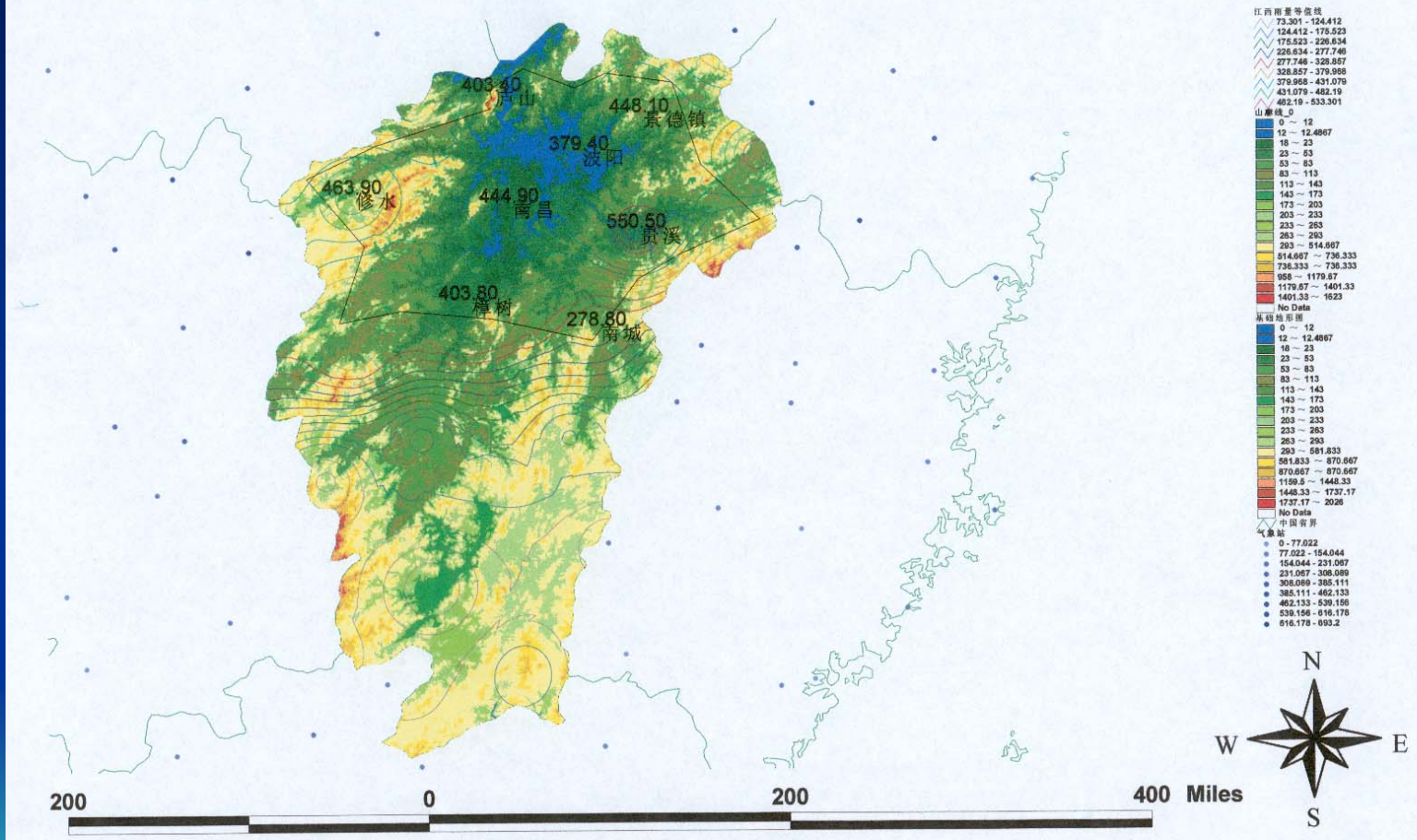
灾情评估->洪灾

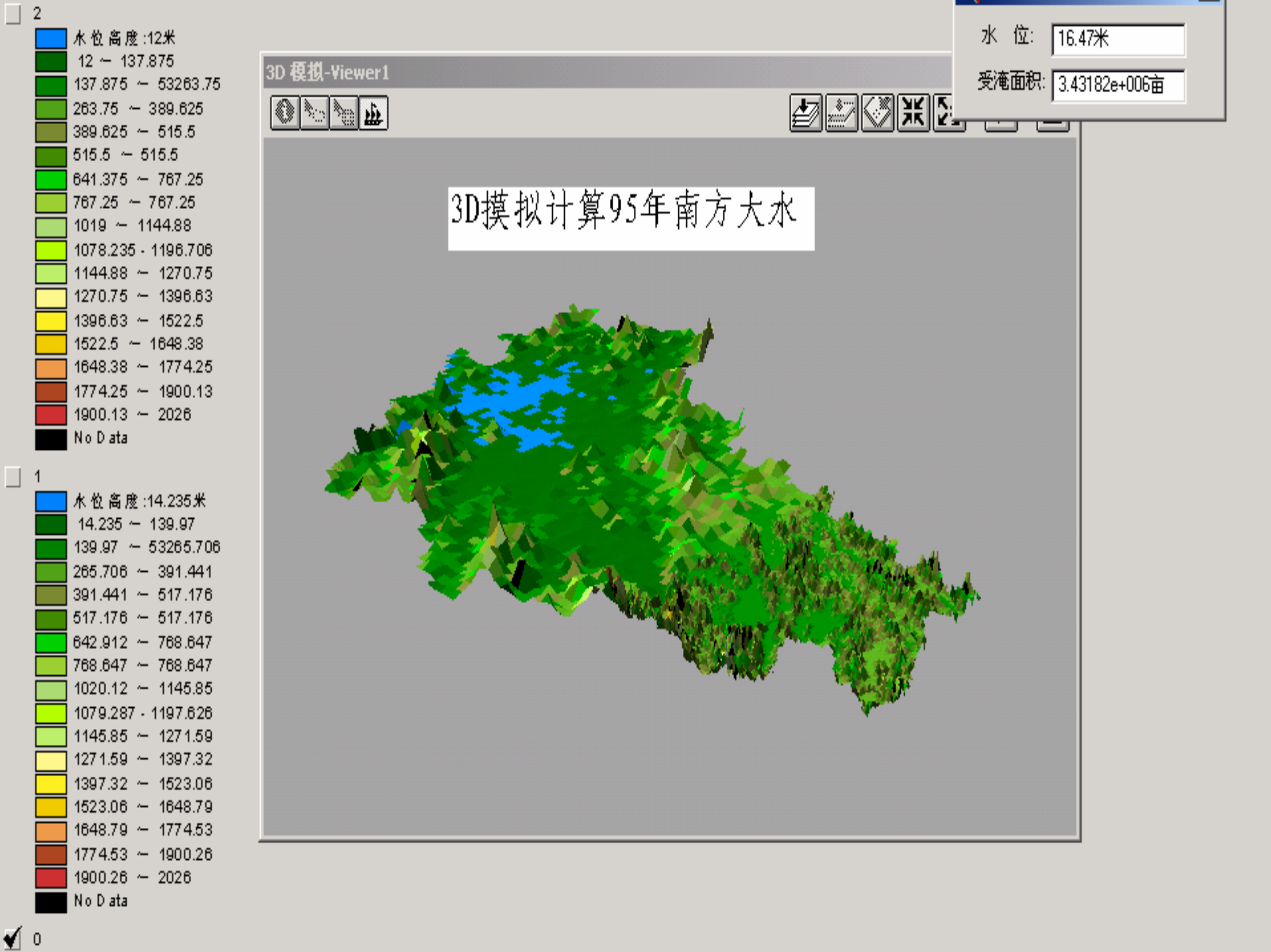
图61

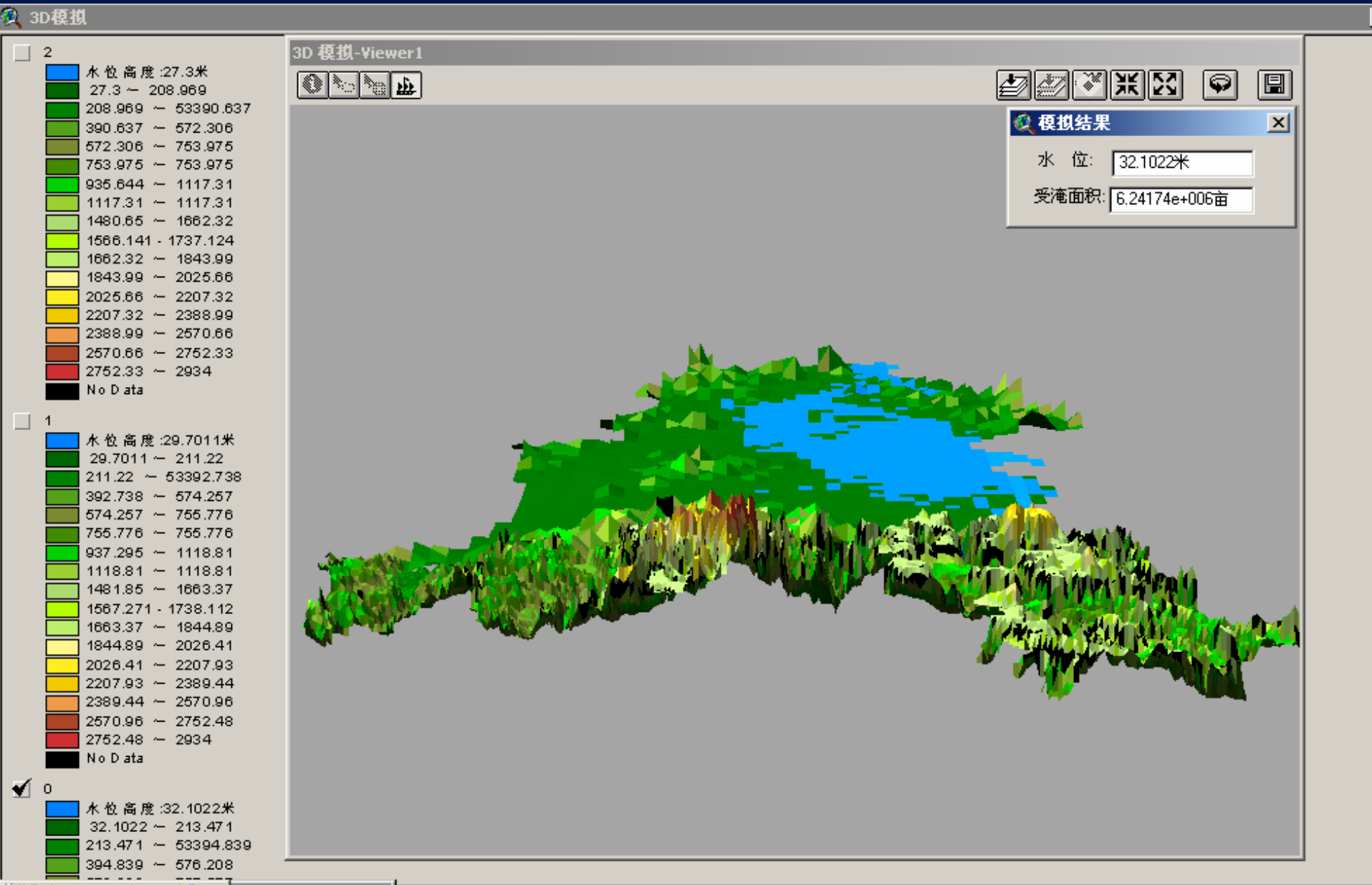

湖泊
受灾区域地形图
0 - 72
73 - 145
146 - 218
219 - 291
292 - 364
365 - 437
438 - 510
511 - 583
584 - 656
No Data
基础地形图
0 - 211
212 - 422
423 - 633
634 - 844
845 - 1056
1057 - 1267
1268 - 1478
1479 - 1689
1690 - 1901
No Data
中国省界
N
W
E
S
200
0
200
400 Miles

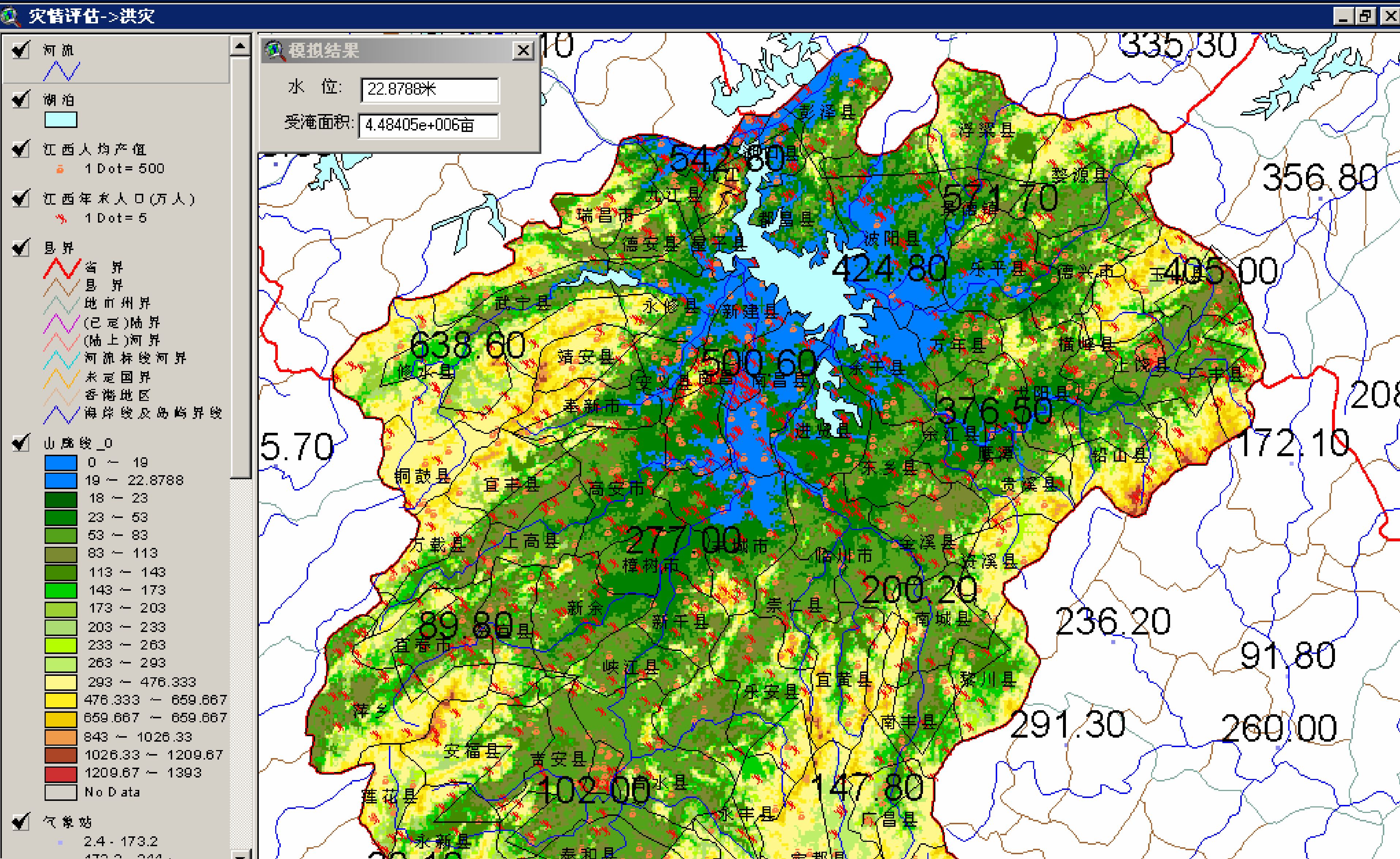
灾情评估->洪灾

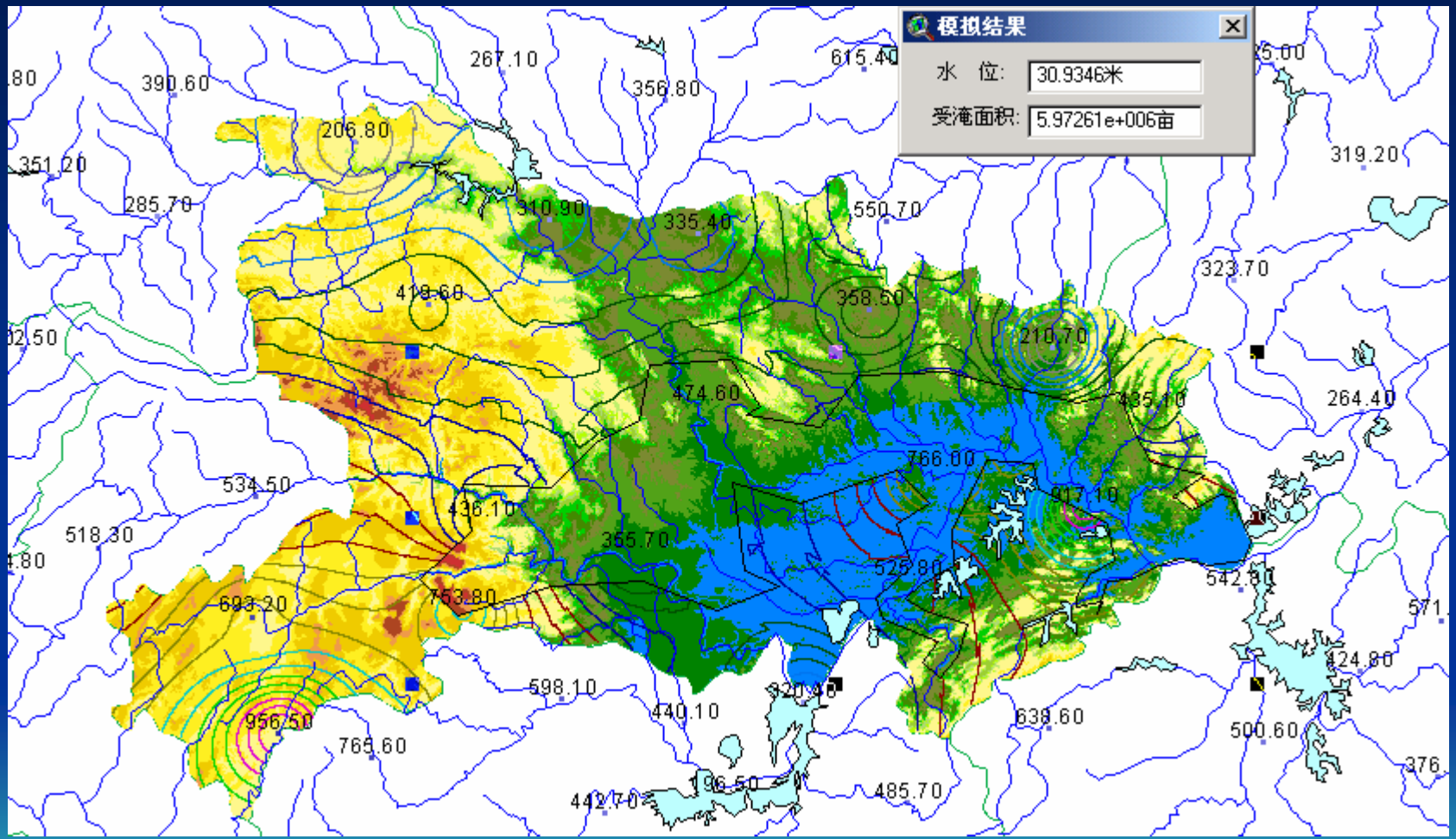
图65

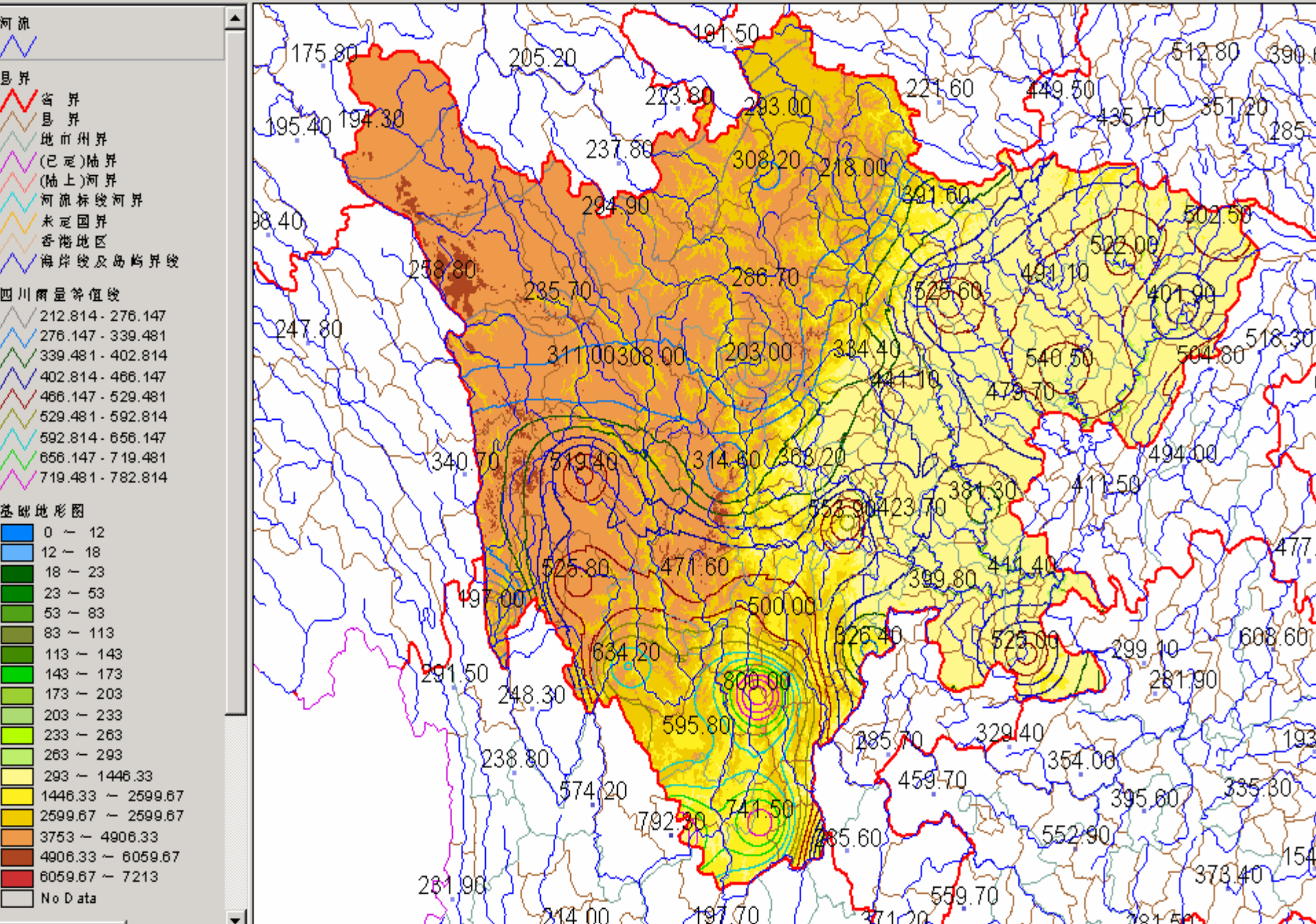

403.40
庐山
448.10
景德镇
379.40
波阳
463.90
修水
444.90
南昌
550.50
贵溪
403.80
樟树
278.80
南城
江西雨量等值线
73.301 - 124.412
124.412 - 175.523
175.523 - 226.634
226.634 - 277.746
277.746 - 328.857
328.857 - 379.968
379.968 - 431.079
431.079 - 482.19
482.19 - 533.301
山脉线_0
0 ~ 12
12 ~ 12.4867
18 ~ 23
23 ~ 53
53 ~ 83
83 ~ 113
113 ~ 143
143 ~ 173
173 ~ 203
203 ~ 233
233 ~ 263
263 ~ 293
293 ~ 514.667
514.667 ~ 736.333
736.333 ~ 736.333
958 ~ 1179.67
1179.67 ~ 1401.33
1401.33 ~ 1623
No Data
基础地形图
0 ~ 12
12 ~ 12.4867
18 ~ 23
23 ~ 53
53 ~ 83
83 ~ 113
113 ~ 143
143 ~ 173
173 ~ 203
203 ~ 233
233 ~ 263
263 ~ 293
293 ~ 581.833
581.833 ~ 870.667
870.667 ~ 870.667
1159.5 ~ 1448.33
1448.33 ~ 1737.17
1737.17 ~ 2026
No Data
中国省界
气象站
0 - 77.022
77.022 - 154.044
154.044 - 231.067
231.067 - 308.089
308.089 - 385.111
385.111 - 462.133
462.133 - 539.156
539.156 - 616.178
616.178 - 693.2
N
W
E
S
200
0
200
400 Miles

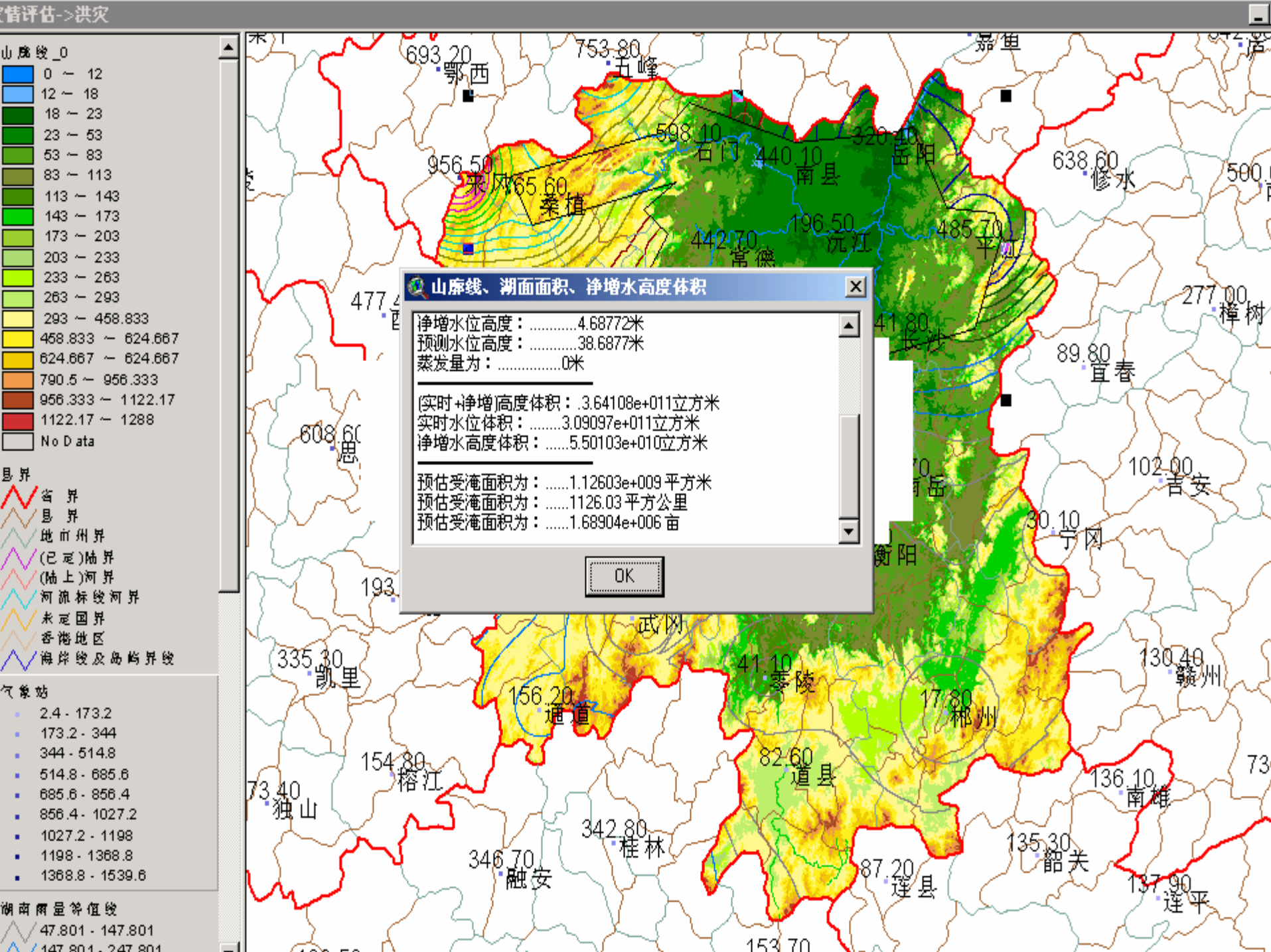

2
水位高度:12米
12 ~ 137.875
137.875 ~ 53263.75
263.75 ~ 389.625
389.625 ~ 515.5
515.5 ~ 515.5
641.375 ~ 767.25
767.25 ~ 767.25
1019 ~ 1144.88
1078.235 - 1196.706
1144.88 ~ 1270.75
1270.75 ~ 1396.63
1396.63 ~ 1522.5
1522.5 ~ 1648.38
1648.38 ~ 1774.25
1774.25 ~ 1900.13
1900.13 ~ 2026
No Data
1
水位高度:14.235米
14.235 ~ 139.97
139.97 ~ 53265.706
265.706 ~ 391.441
391.441 ~ 517.176
517.176 ~ 517.176
642.912 ~ 768.647
768.647 ~ 768.647
1020.12 ~ 1145.85
1079.287 - 1197.626
1145.85 ~ 1271.59
1271.59 ~ 1397.32
1397.32 ~ 1523.06
1523.06 ~ 1648.79
1648.79 ~ 1774.53
1774.53 ~ 1900.26
1900.26 ~ 2026
No Data
0
3D 模拟-Viewer1
3D摸拟计算95年南方大水
水 位: 16.47米
受淹面积: 3.43182e+006亩


3D模拟
2
水位高度:27.3米
27.3 ~ 208.969
208.969 ~ 53390.637
390.637 ~ 572.306
572.306 ~ 753.975
753.975 ~ 753.975
935.644 ~ 1117.31
1117.31 ~ 1117.31
1480.65 ~ 1662.32
1566.141 - 1737.124
1662.32 ~ 1843.99
1843.99 ~ 2025.66
2025.66 ~ 2207.32
2207.32 ~ 2388.99
2388.99 ~ 2570.66
2570.66 ~ 2752.33
2752.33 ~ 2934
No Data
1
水位高度:29.7011米
29.7011 ~ 211.22
211.22 ~ 53392.738
392.738 ~ 574.257
574.257 ~ 755.776
755.776 ~ 755.776
937.295 ~ 1118.81
1118.81 ~ 1118.81
1481.85 ~ 1663.37
1567.271 - 1738.112
1663.37 ~ 1844.89
1844.89 ~ 2026.41
2026.41 ~ 2207.93
2207.93 ~ 2389.44
2389.44 ~ 2570.96
2570.96 ~ 2752.48
2752.48 ~ 2934
No Data
0
水位高度:32.1022米
32.1022 ~ 213.471
213.471 ~ 53394.839
394.839 ~ 576.208
3D 模拟-Viewer1
模拟结果
水 位: 32.1022米
受淹面积: 6.24174e+006亩

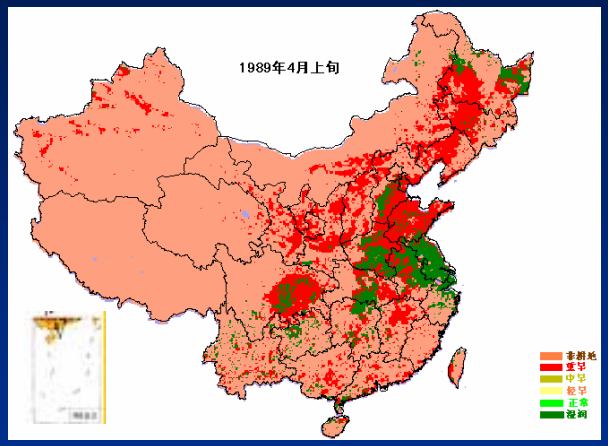

灾情评估->洪灾
模拟结果
水 位: 22.8788米
受淹面积: 4.48405e+006亩
河流
湖泊
江西人均产值
1 Dot = 500
江西年末人口(万人)
1 Dot = 5
县界
省界
县界
地市州界
(已定)陆界
(陆上)河界
河流标线河界
未定国界
香港地区
海岸线及岛屿界线
山脉线_0
0 ～ 19
19 ～ 22.8788
18 ～ 23
23 ～ 53
53 ～ 83
83 ～ 113
113 ～ 143
143 ～ 173
173 ～ 203
203 ～ 233
233 ～ 263
263 ～ 293
293 ～ 476.333
476.333 ～ 659.667
659.667 ～ 659.667
843 ～ 1026.33
1026.33 ～ 1209.67
1209.67 ～ 1393
No Data
气象站
2.4 - 173.2
335.30
彭泽县
浮梁县
542.80
571.70
婺源县
356.80
九江县
瑞昌市
都昌县
德安县
星子县
波阳县
424.80
乐平县
德兴市
405.00
武宁县
永修县
新建县
万年县
横峰县
638.60
靖安县
500.60
修水县
上饶县
安义县
南昌县
余干县
奉新市
376.50
弋阳县
208
5.70
进贤县
余江县
172.10
鹰潭
铅山县
铜鼓县
宜丰县
高安市
东乡县
贵溪县
万载县
上高县
277.00
樟树市
临川市
金溪县
资溪县
200.20
新余
新干县
崇仁县
南城县
236.20
89.80
宜春市
91.80
峡江县
宜黄县
黎川县
乐安县
萍乡
291.30
260.00
南丰县
安福县
吉安县
102.00
147.80
莲花县
永丰县
广昌县
永新县
泰和县

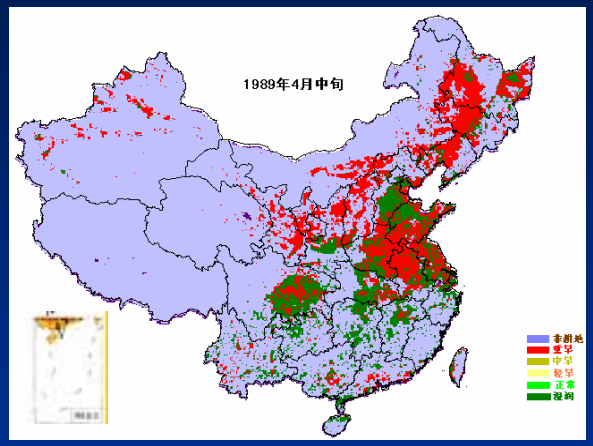

模拟结果
水 位: 30.9346米
受淹面积: 5.97261e+006亩
267.10
615.40
356.80
390.60
206.80
351.20
285.70
310.90
335.40
550.70
319.20
323.70
418.60
358.60
210.70
474.60
435.10
264.40
766.00
534.50
436.10
917.10
518.30
355.70
525.80
542.80
693.20
753.80
598.10
920.40
440.10
638.60
500.60
956.50
765.60
196.50
485.70
442.70
424.80
376

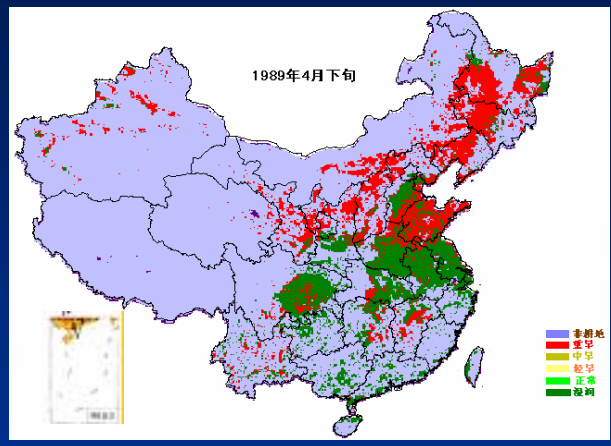

河流
县界
省 界
县 界
地市州界
(已定)陆界
(陆上)河界
河流标绘河界
未定国界
香港地区
海岸线及岛屿界线
四川降雨量等值线
212.814 - 276.147
276.147 - 339.481
339.481 - 402.814
402.814 - 466.147
466.147 - 529.481
529.481 - 592.814
592.814 - 656.147
656.147 - 719.481
719.481 - 782.814
基础地形图
0 ~ 12
12 ~ 18
18 ~ 23
23 ~ 53
53 ~ 83
83 ~ 113
113 ~ 143
143 ~ 173
173 ~ 203
203 ~ 233
233 ~ 263
263 ~ 293
293 ~ 1446.33
1446.33 ~ 2599.67
2599.67 ~ 2599.67
3753 ~ 4906.33
4906.33 ~ 6059.67
6059.67 ~ 7213
No Data

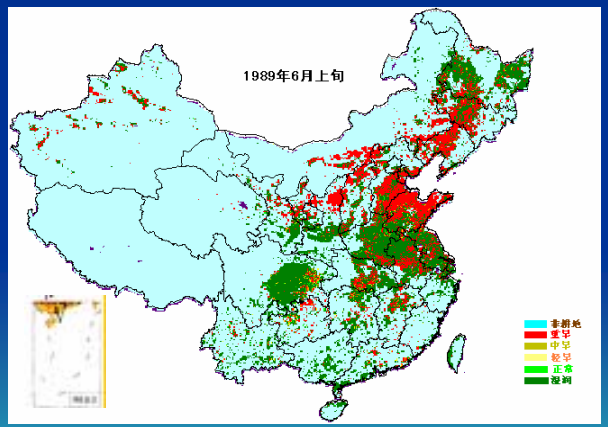

灾情评估->洪灾
山庳线_0
0 ~ 12
12 ~ 18
18 ~ 23
23 ~ 53
53 ~ 83
83 ~ 113
113 ~ 143
143 ~ 173
173 ~ 203
203 ~ 233
233 ~ 263
263 ~ 293
293 ~ 458.833
458.833 ~ 624.667
624.667 ~ 624.667
790.5 ~ 956.333
956.333 ~ 1122.17
1122.17 ~ 1288
No Data
县界
省 界
县 界
地市州界
(已定)陆界
(陆上)河界
河流标线河界
未定国界
香港地区
海岸线及岛屿界线
气象站
2.4 - 173.2
173.2 - 344
344 - 514.8
514.8 - 685.6
685.6 - 856.4
856.4 - 1027.2
1027.2 - 1198
1198 - 1368.8
1368.8 - 1539.6
湖南雨量等值线
47.801 - 147.801
147.801 - 247.801
山庳线、湖面面积、净增水高度体积
净增水位高度：.....4.68772米
预测水位高度：.....38.6877米
蒸发量为：.....0米
(实时+净增)高度体积：.3.64108e+011立方米
实时水位体积：.....3.09097e+011立方米
净增水高度体积：.....5.50103e+010立方米
预估受淹面积为：.....1.12603e+009平方米
预估受淹面积为：.....1126.03平方公里
预估受淹面积为：.....1.68904e+006亩
OK
693.20
鄂西
753.80
五峰
956.50
来凤
765.60
桑植
598.10
石门
440.10
南县
320.20
岳阳
638.60
修水
442.70
常德
196.50
沅江
485.70
平江
277.00
樟树
89.80
宜春
102.00
吉安
30.10
宁冈
衡阳
335.30
凯里
156.20
通道
41.10
零陵
17.80
郴州
130.40
赣州
154.30
榕江
82.60
道县
136.10
南雄
73.40
独山
342.80
桂林
346.70
融安
135.30
韶关
87.20
连县
137.90
连平
153.70

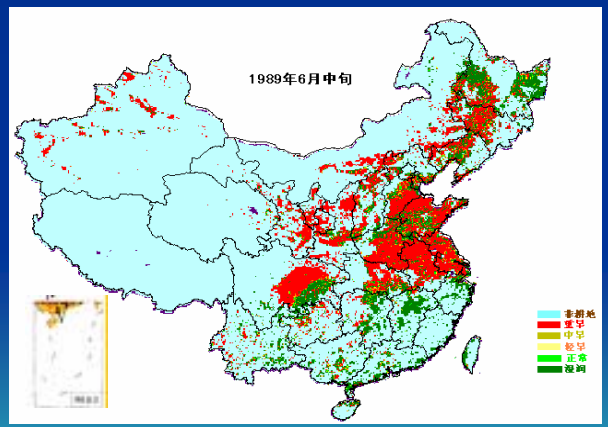
DROUGHT MONITORING CHART BY REMOTE SENSING IN 1989

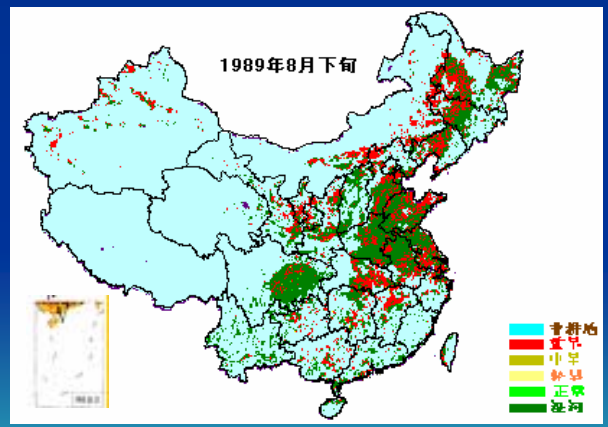




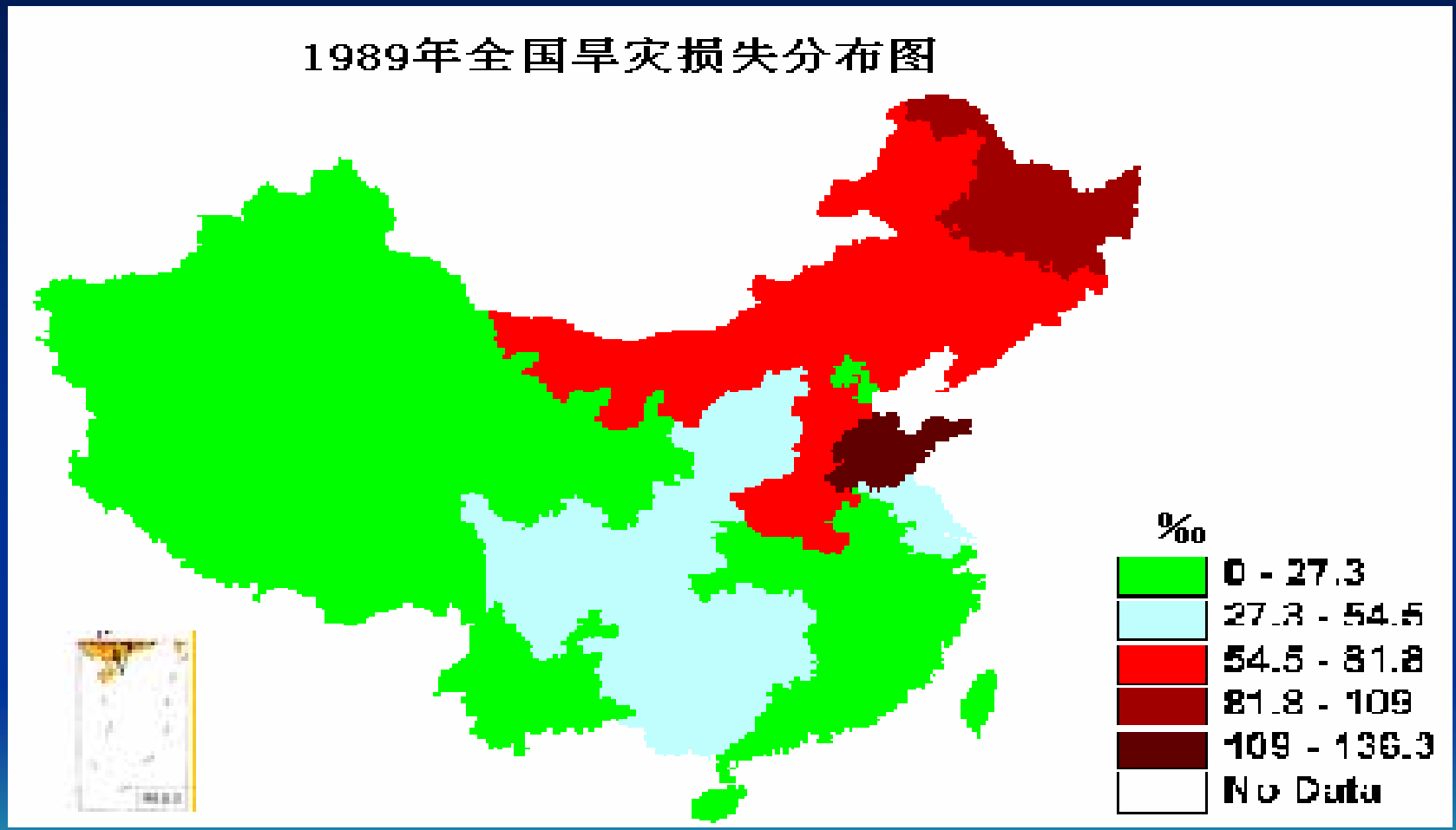








DROUGHT-STRIKEN AREA OF FARMLAND IN 1989



3. China Modern Setup on Disaster Reduction

A. Satellite and Airplane Systems;

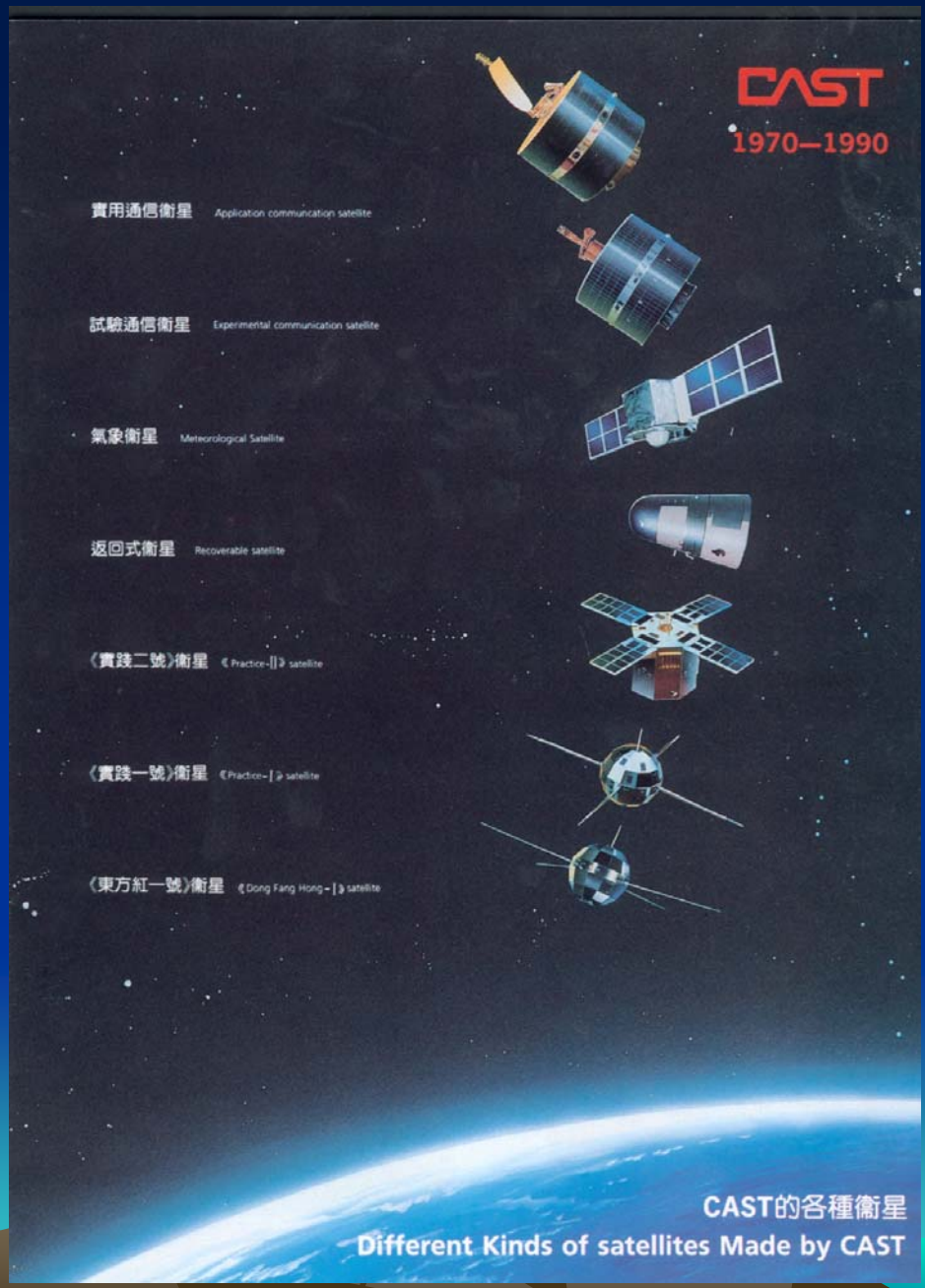
B . Atmospheric, Oceanic; Earthquake etc. Systems;

C. Safety, Disaster Reduction, and Emerging Responding Systems;

D. Modern Study Systems on Disaster Reduction;

etc.

A. Satellite and Airplane Systems;

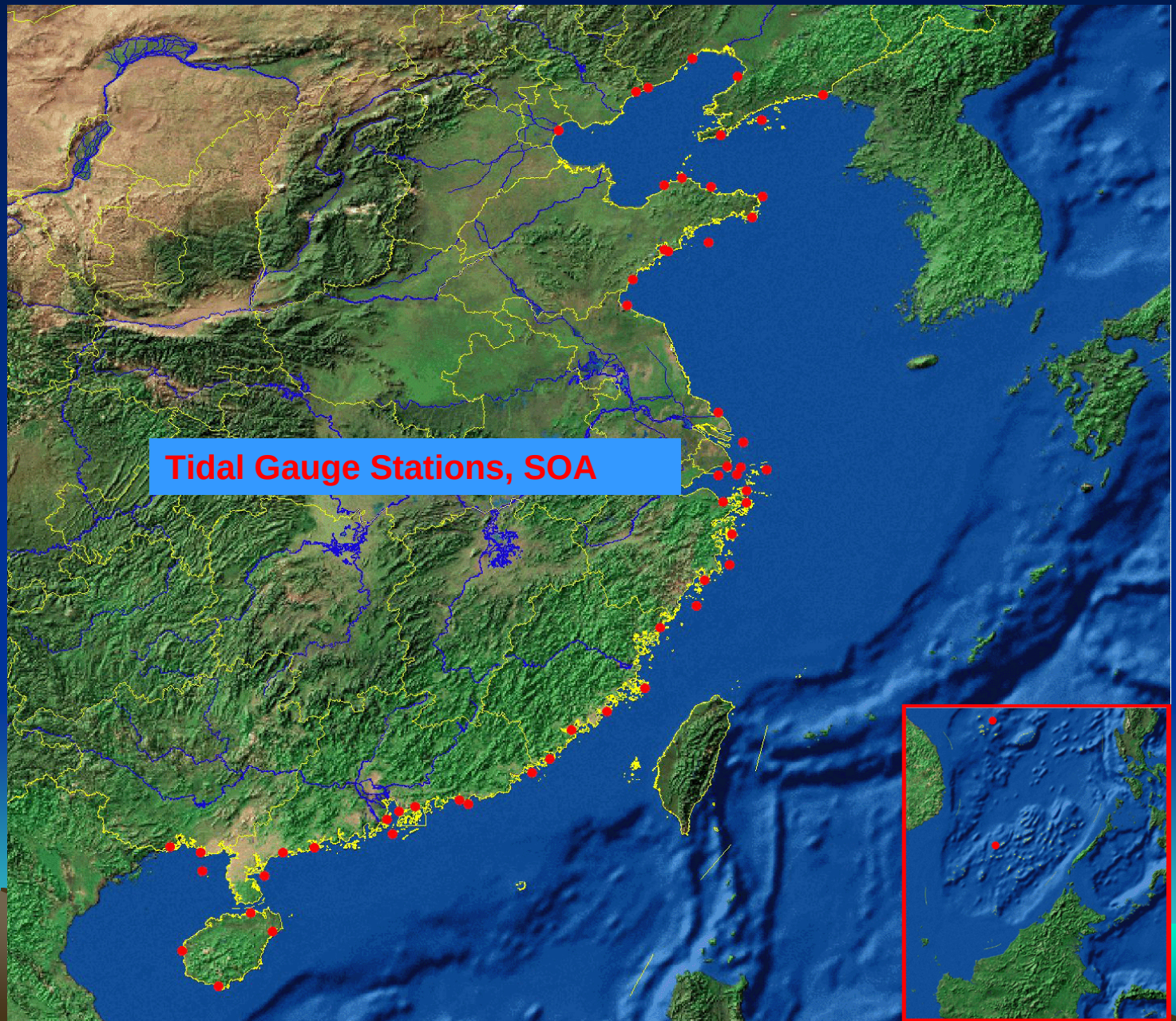

CAST
1970—1990
實用通信衛星 Application communcation satellite
試驗通信衛星 Experimental communication satellite
氣象衛星 Meteorological Satellite
返回式衛星 Recoverable satellite
《實踐二號》衛星 《Practice-Ⅱ》satellite
《實踐一號》衛星 《Practice-Ⅰ》satellite
《東方紅一號》衛星 《Dong Fang Hong-Ⅰ》satellite
CAST的各種衛星
Different Kinds of satellites Made by CAST


中国电信
CHINA TELECOM
中国应急通信
China's Emergency Communications
应急通信
应急通信


0688
新疆
黑龙江
吉林
沈阳
内蒙古
北京
河北
山西
山东
宁夏
青海
甘肃
陕西
河南
安徽
江苏
上海
浙江
湖北
四川
西藏
江西
湖南
贵州
福建
台湾
云南
广西
广东
香港
海南
南海
南海诸岛

B . Atmospheric, Oceanic, Earthquake etc. Systems;

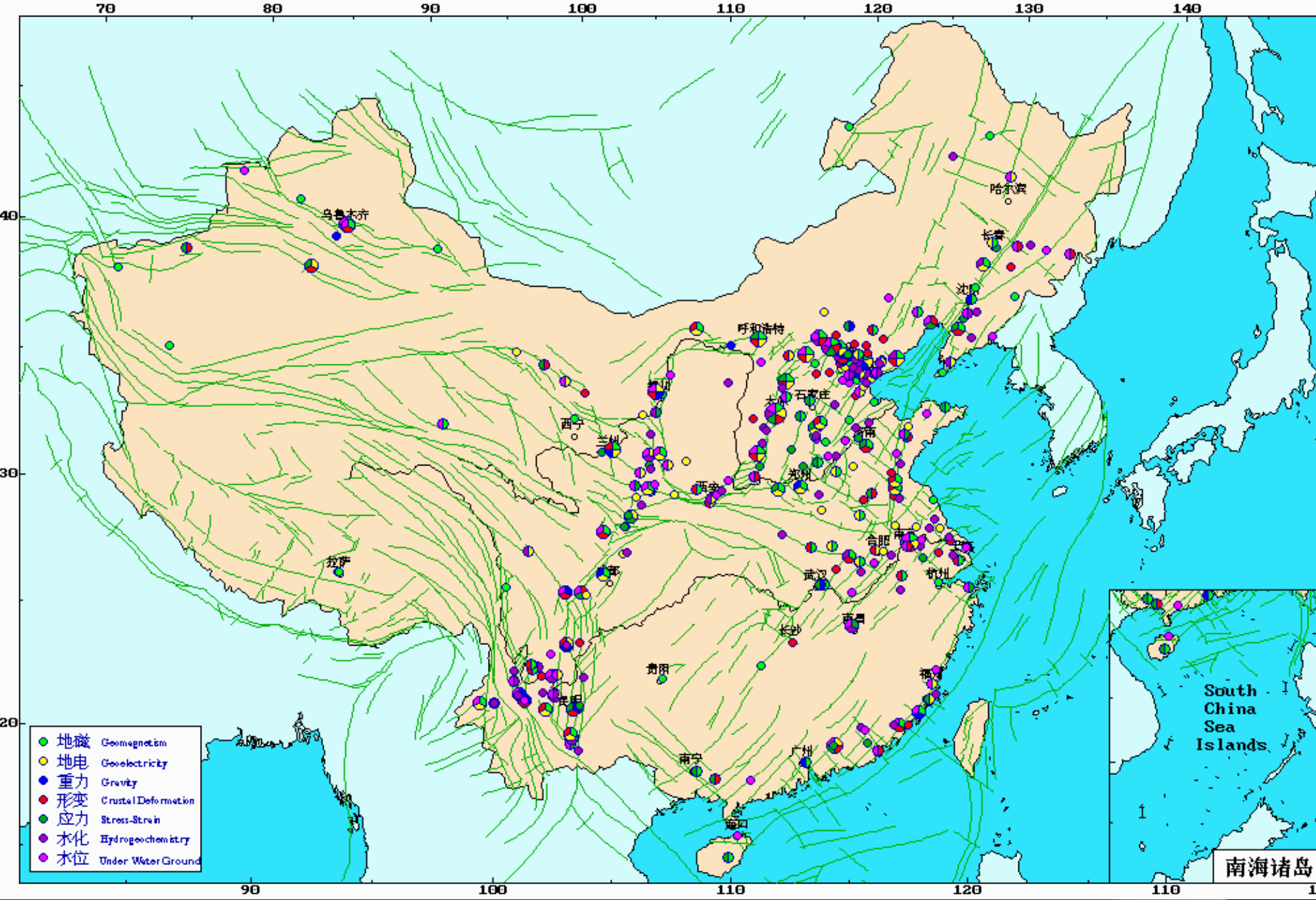

CINRAD Locations
S-Band (65)
C-Band (38)
Sea of Japan
Bohai Sea
Yellow Sea
Pacific Ocean
East China Sea
South China Sea
Bay of Bengal
Indian Ocean
South China Sea


Tidal Gauge Stations, SOA


中国海洋环境综合监测系统

中国地震前兆观测台站分布图

Observational Stations of Seismic Precursor in China



中国监测--预报--预警系统

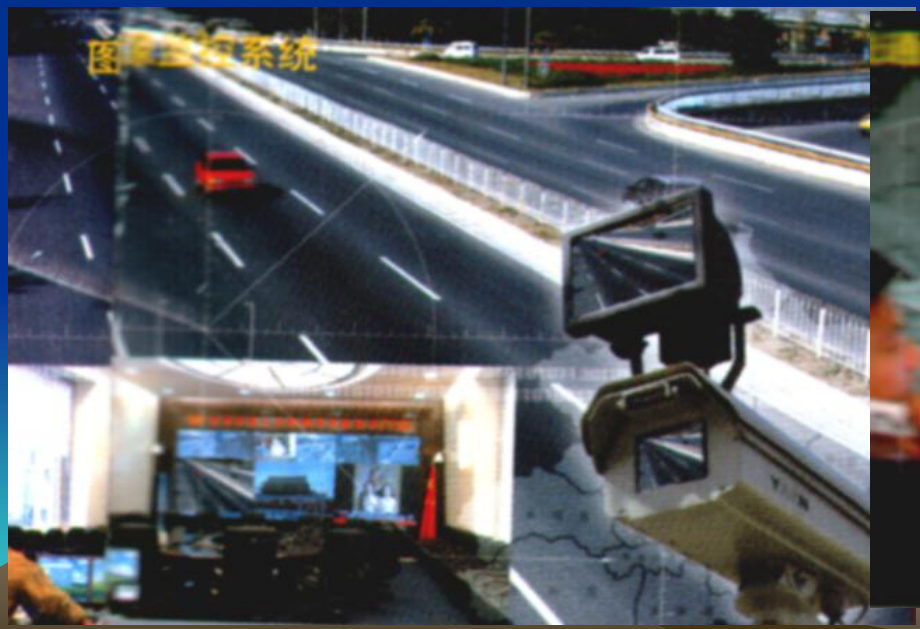
1. 气象系统:	2,633	气象站
	957	雨量站
	400	气象雷达站
2. 水文系统:	3,172	水文站
	15,368	雨量站
	1,149	水位站
	13,648	井水位站
3. 地震系统:	1,300	地震观测站
4. 海洋系统:	104	海洋观测站
5. 农业系统:	1,900	监测站预报站
6. 林业系统:	1,898	林业病虫站
7. 林火系统:	6,132	林火监测站 等等。

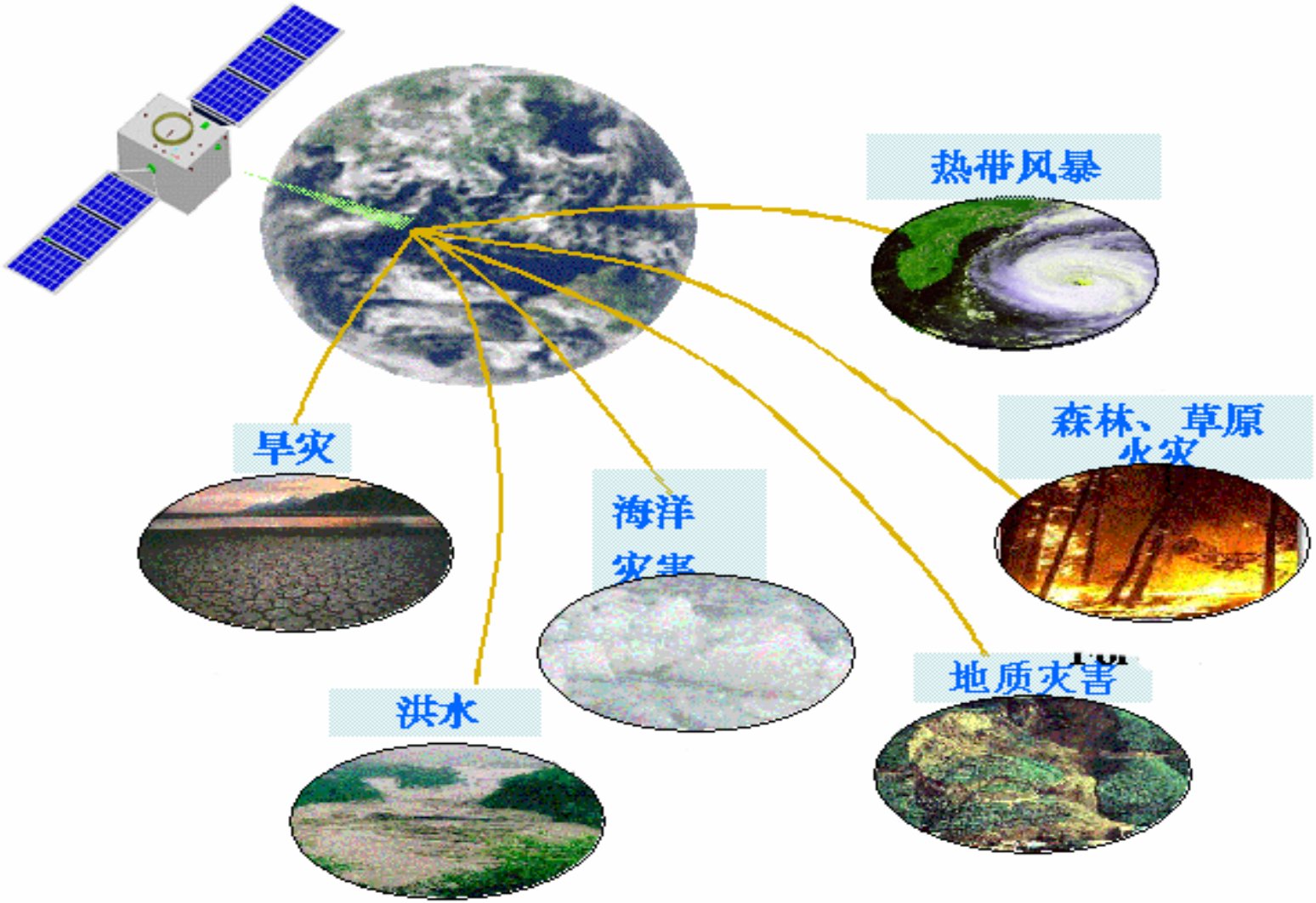
C. Safety, Disaster Reduction, and Emerging Responding Systems;


911, 2001 in USA


计算机网络应用系统

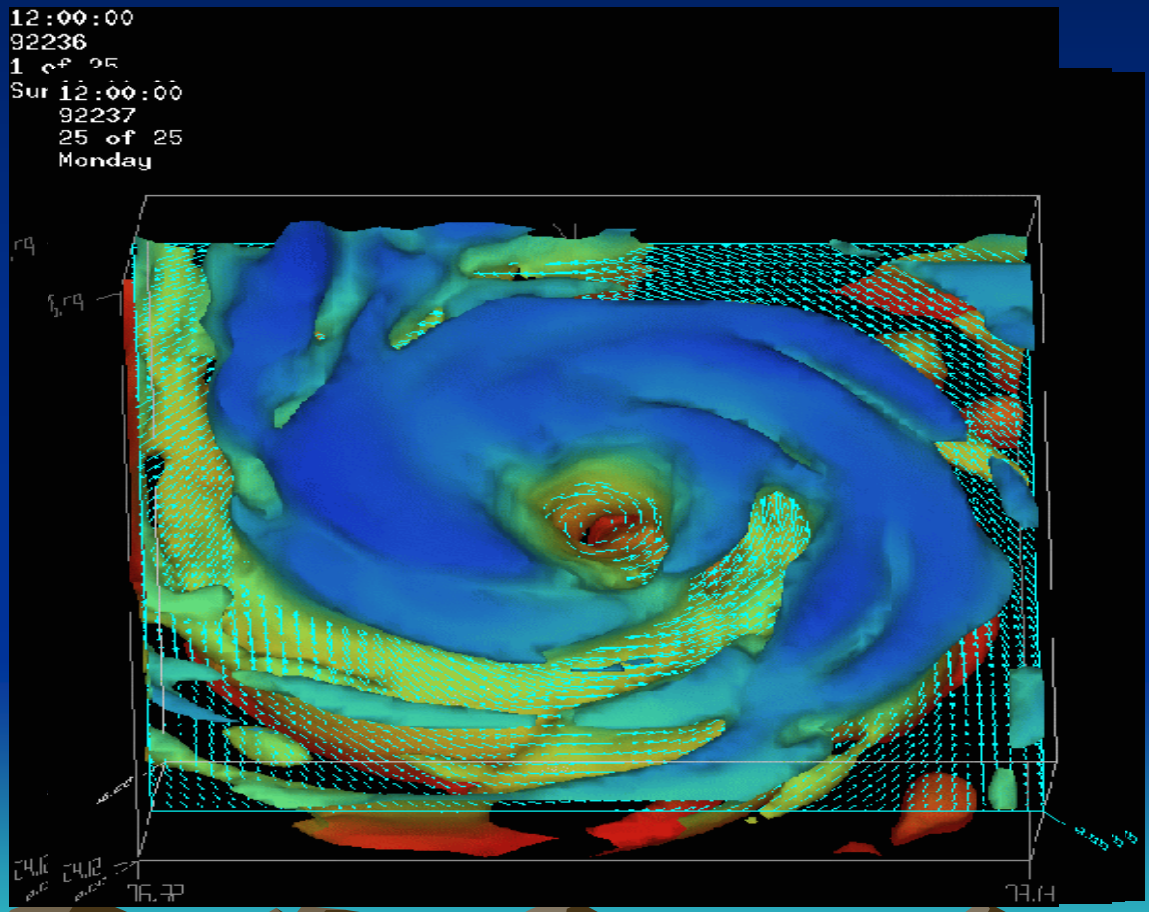

综合保障系统
北京市
应急指挥中心

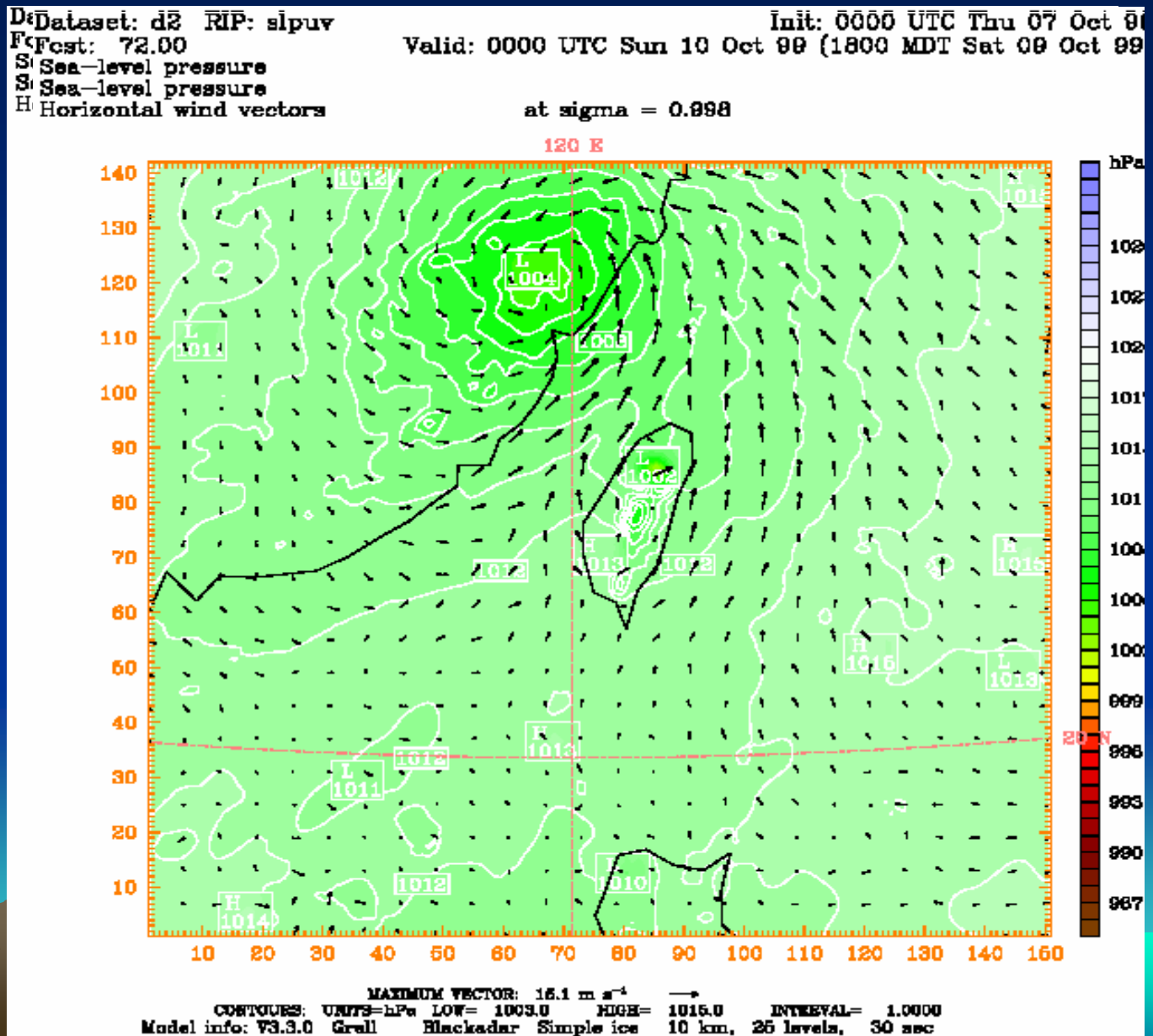


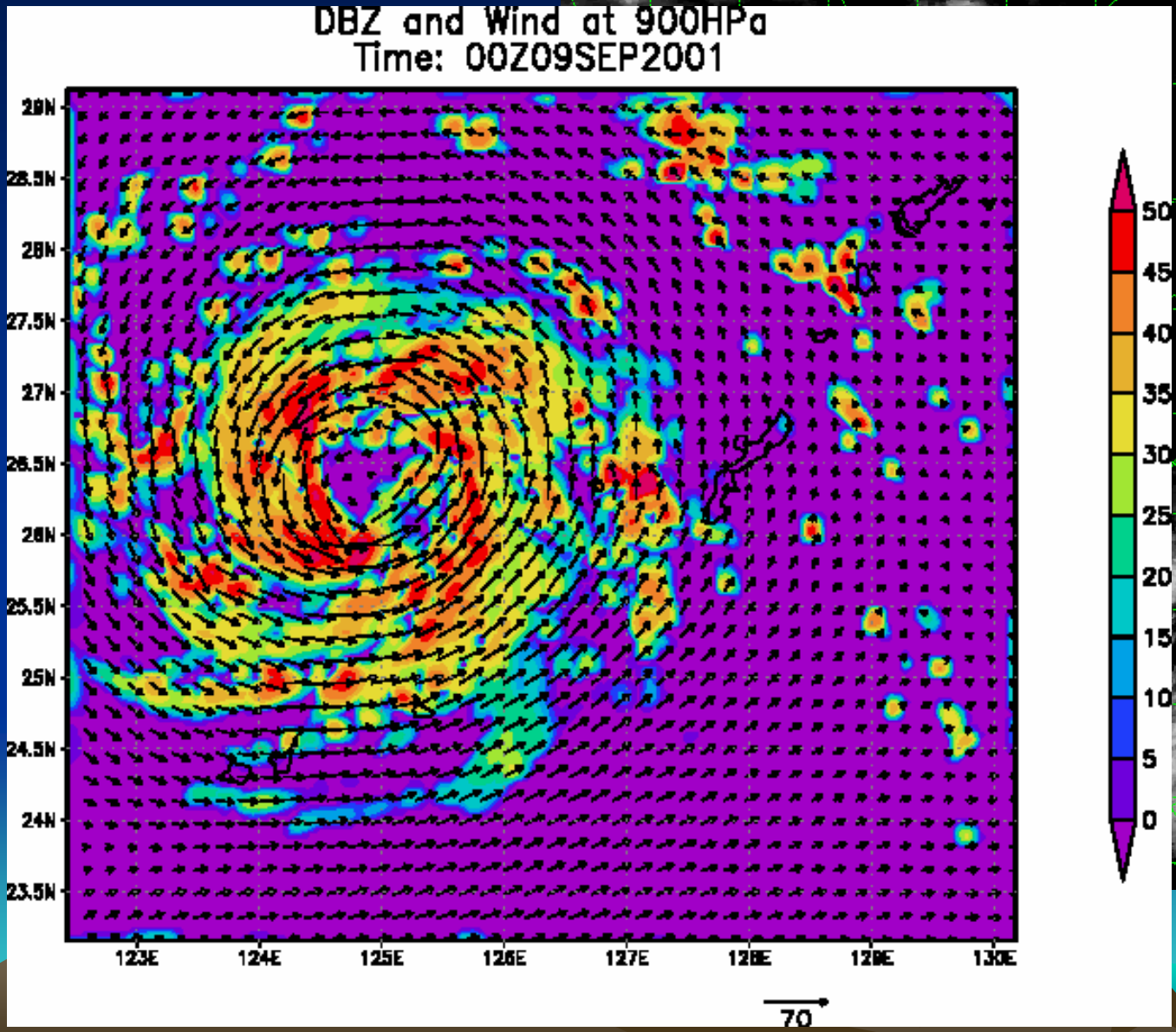

热带风暴
旱灾
森林、草原
火灾
海洋
灾害
洪水
地质灾害

D. Modern Study Systems on Disaster Reduction;

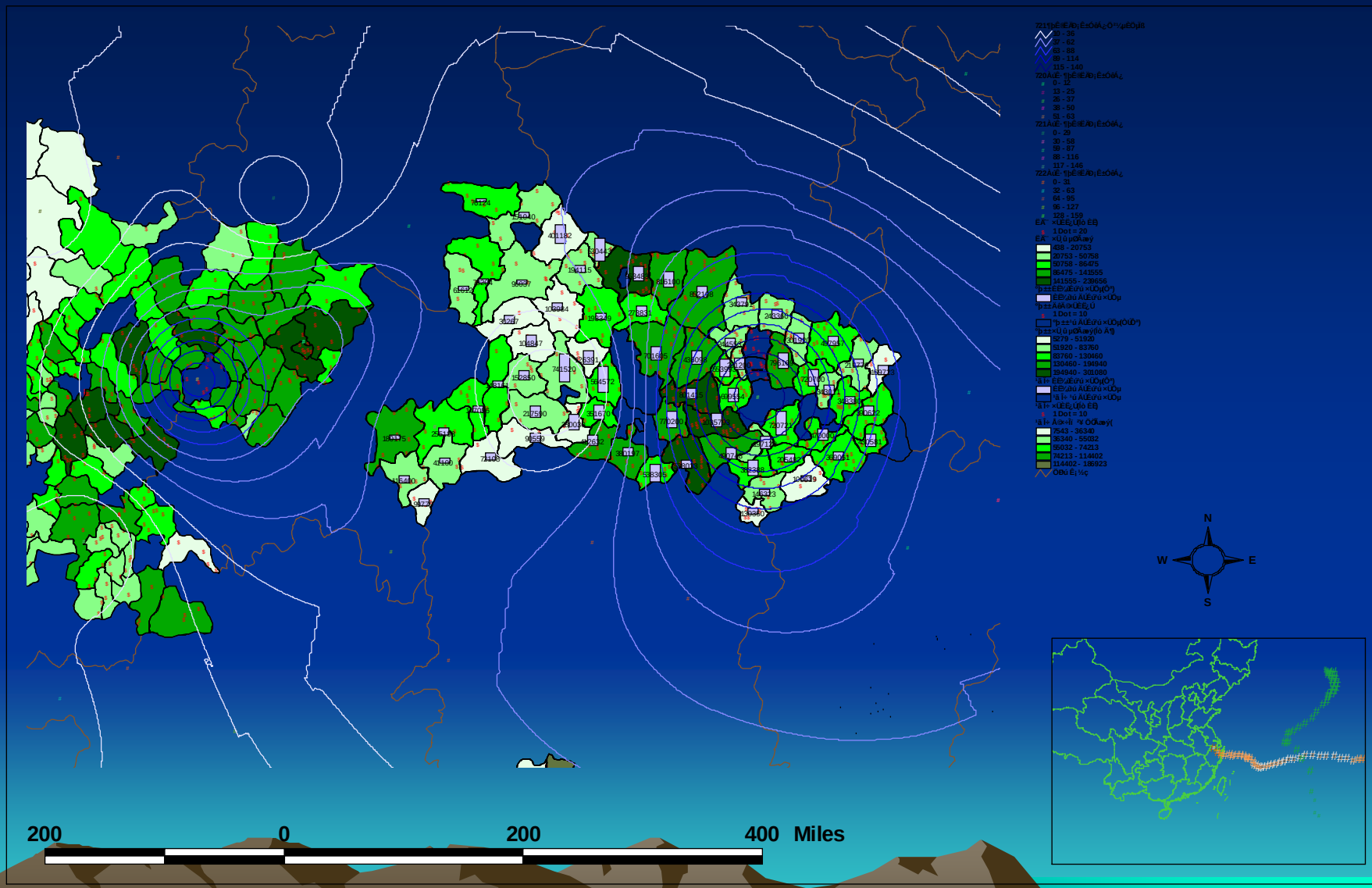
Hourly (Low) reflectivity and z = 5 km winds (47 – 72 h)

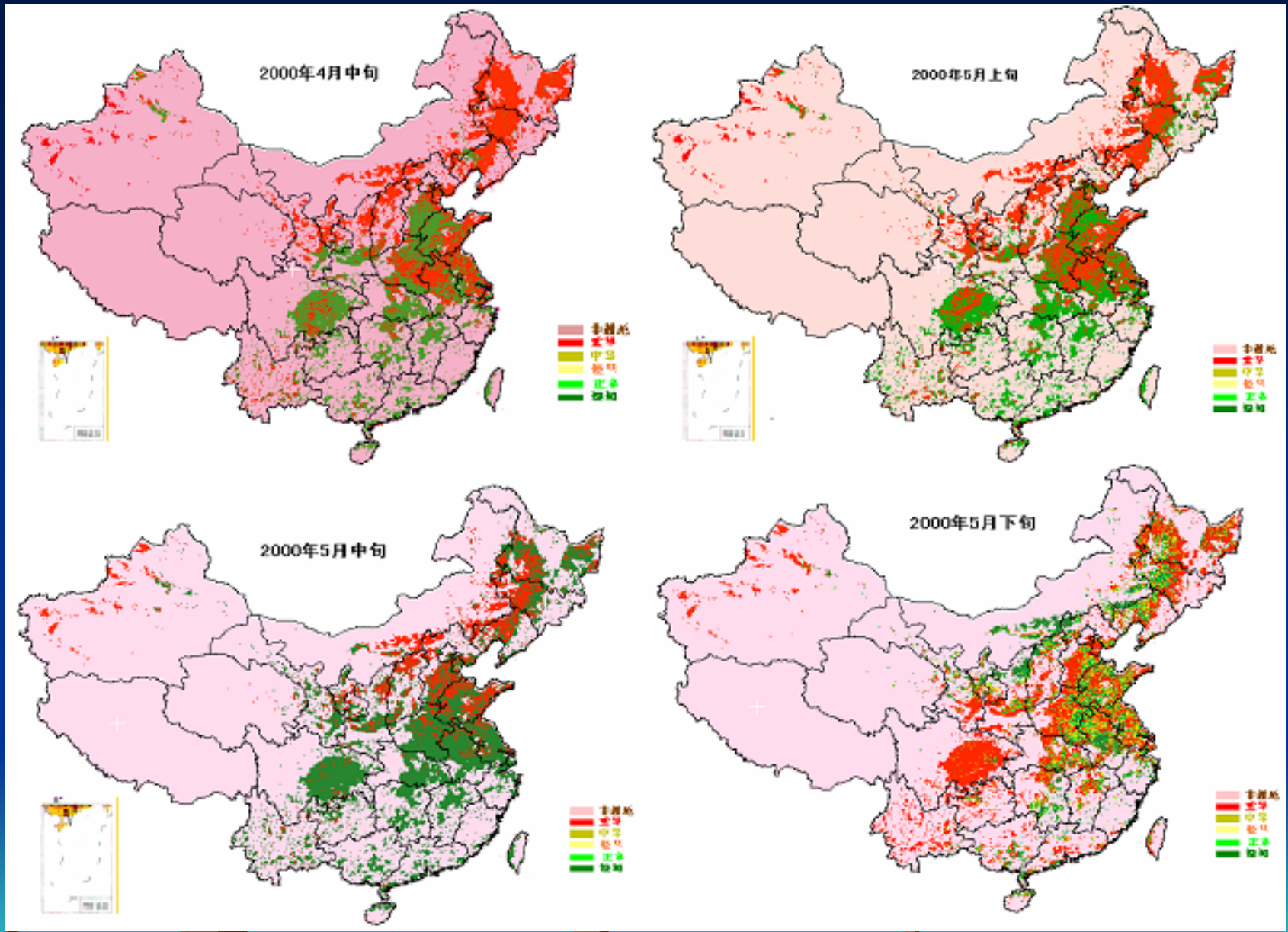



Dataset: d2 RIP: slpuv
Fcst: 72.00
Sea-level pressure
Sea-level pressure
Horizontal wind vectors
Init: 0000 UTC Thu 07 Oct 9
Valid: 0000 UTC Sun 10 Oct 99 (1800 MDT Sat 09 Oct 99
at sigma = 0.998
120 E
20 N
hPa
MAXIMUM VECTOR: 15.1 m s-1
CONTOURS: UNITS=hPa LOW= 1003.0 HIGH= 1015.0 INTERVAL= 1.0000
Model info: V3.3.0 Grell Blackadar Simple ice 10 km, 25 levels, 30 sec


DBZ and Wind at 900HPa
Time: 00Z09SEP2001
29N
28.5N
28N
27.5N
27N
26.5N
26N
25.5N
25N
24.5N
24N
23.5N
123E
124E
125E
126E
127E
128E
129E
130E
70
50
45
40
35
30
25
20
15
10
5
0

RTZD1998-07-20-00




2000年4月中旬
2000年5月上旬
2000年5月中旬
2000年5月下旬

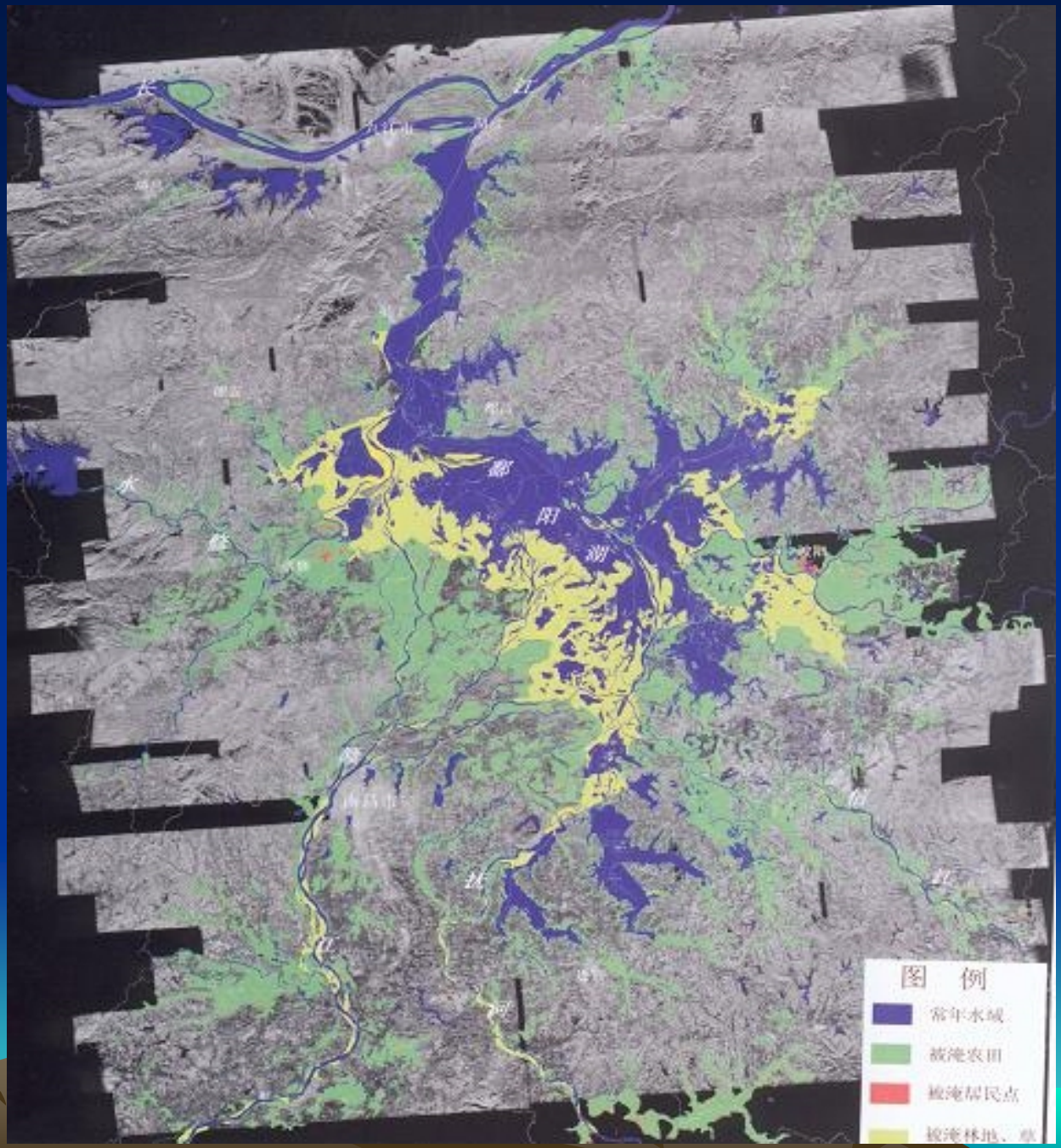
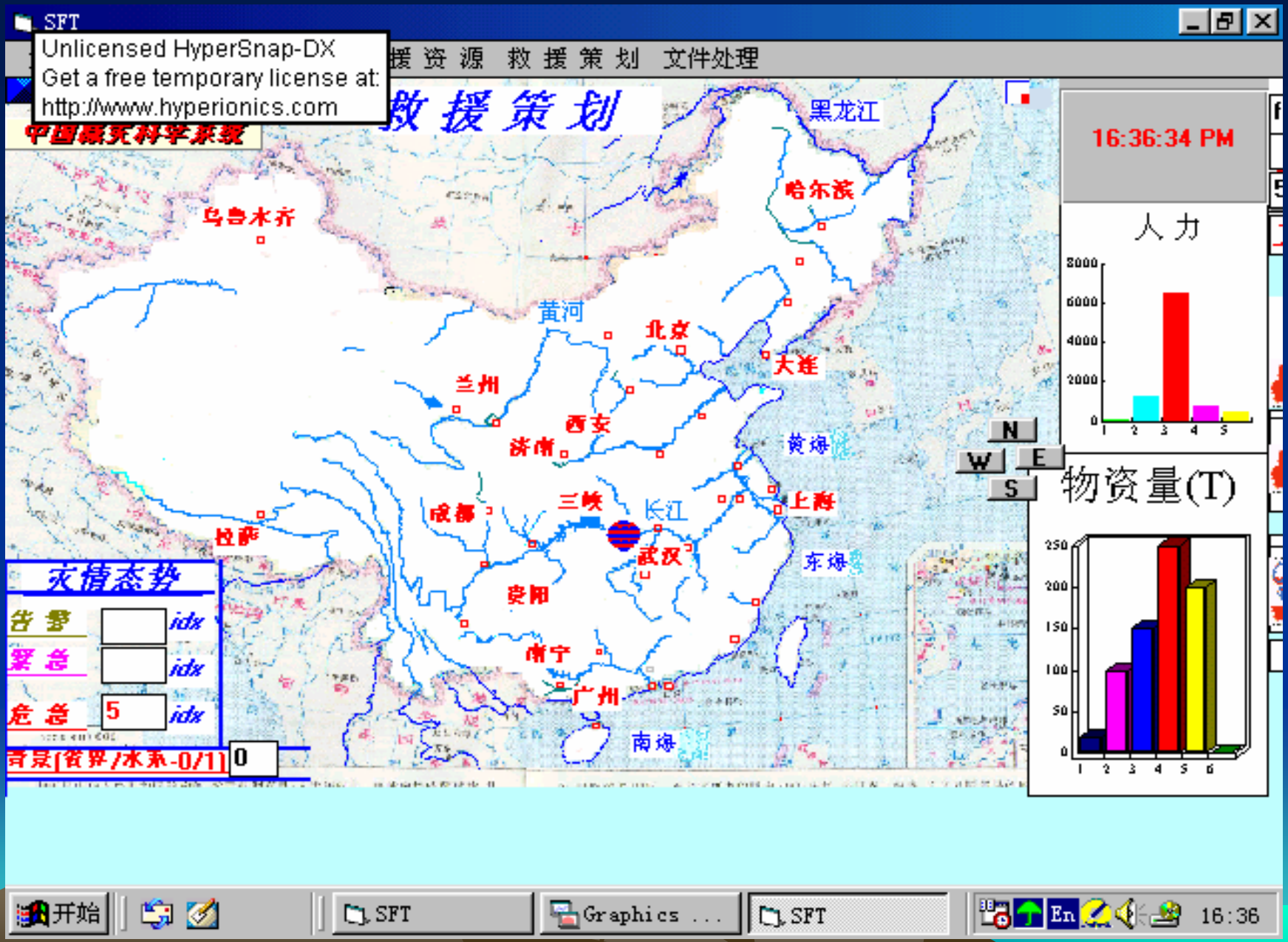


图 例
常年水域
被淹农田
被淹居民点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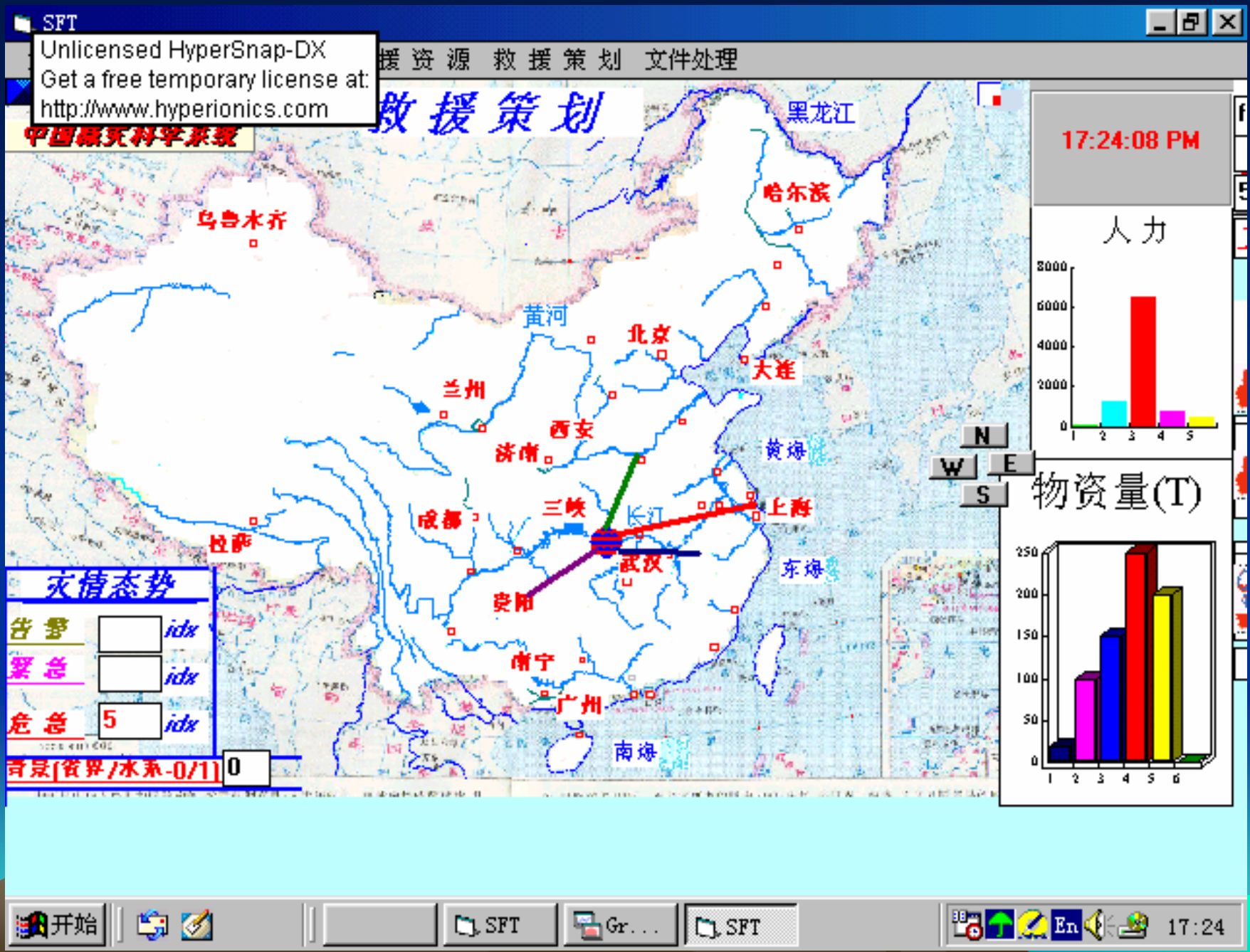
救援策划
中国减灾科学系统
黑龙江
哈尔滨
乌鲁木齐
黄河
北京
大连
兰州
西安
济南
黄海
三峡
长江
成都
上海
拉萨
武汉
东海
安阳
南宁
广州
南海
16:36:34 PM
人力
8000
6000
4000
2000
0
1 2 3 4 5
N
W
E
S
物资量(T)
250
200
150
100
50
0
1 2 3 4 5 6
灾情态势
告 警
idx
紧 急
idx
危 急
5
idx
背景[省界/水系-0/1]
0
开始
SFT
Graphics ...
SFT
En
16:36


SFT
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http://www.hyperionics.com
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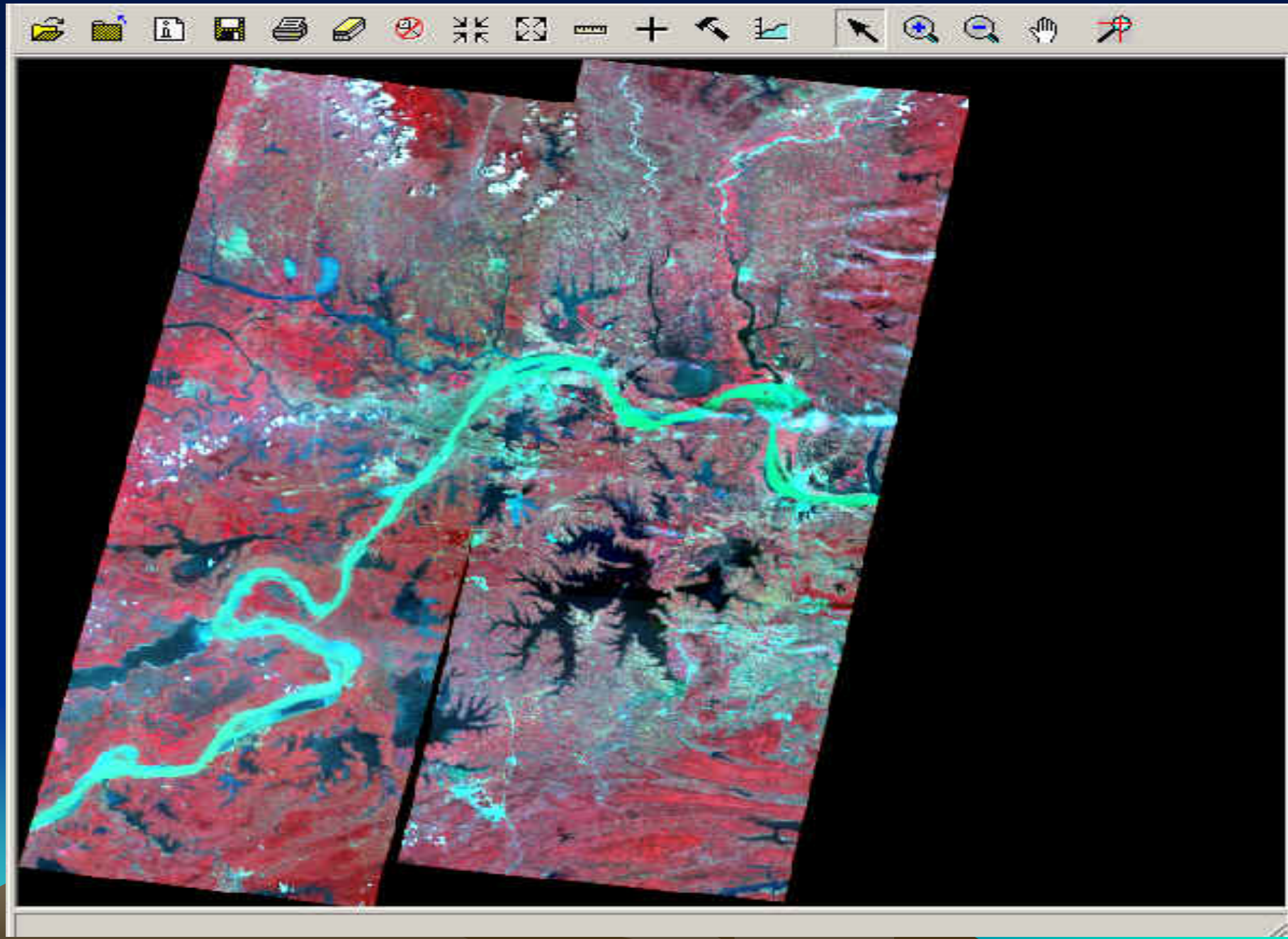
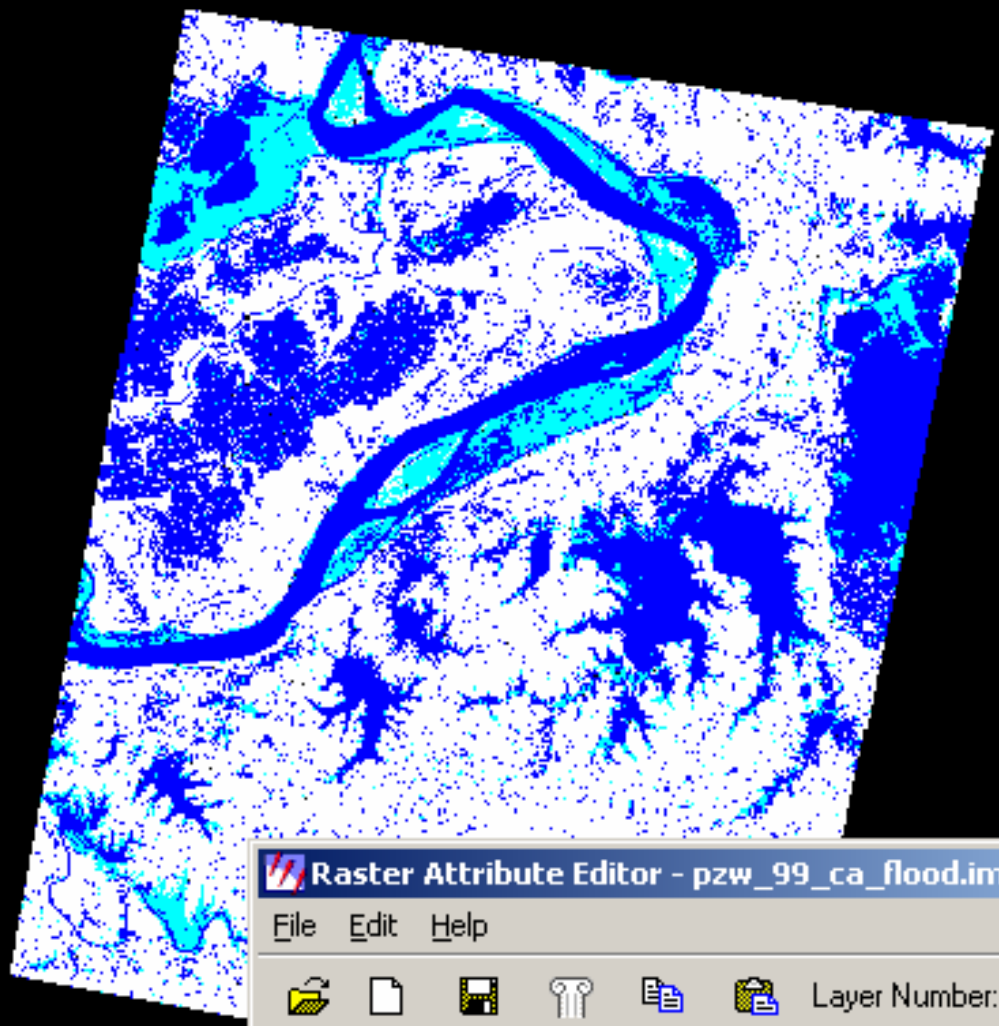
救援策划
中国减灾科学系统
17:24:08 PM
人力
物资量(T)
黑龙江
哈尔滨
乌鲁木齐
黄河
北京
大连
兰州
西安
济南
黄海
成都
三峡
长江
上海
拉萨
武汉
东海
安阳
南宁
广州
南海
N
W
E
S
灾情态势
告 警
紧 急
危 急
idx
5
背景[省界/水系-0/1]
0
开始
SFT
Gr...
SFT
En
17:24





Raster Attribute Editor - pzw_99_ca_flood.img(:Layer_1)

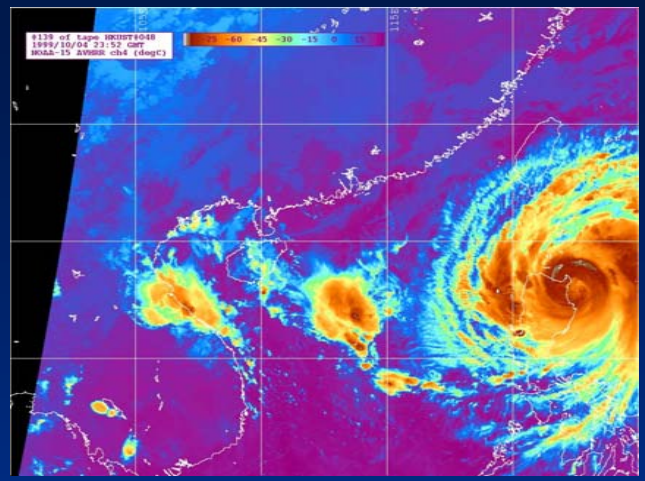
File Edit Help

Layer Number: 1

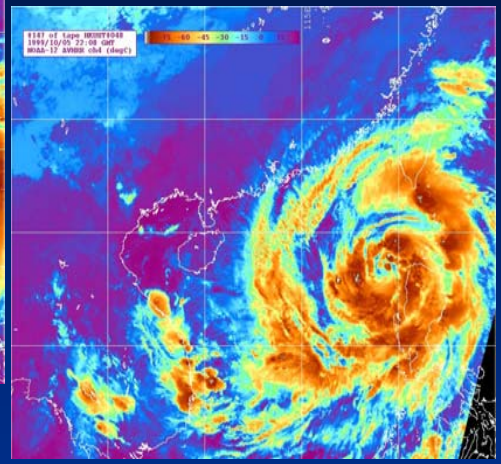
Row	Discration	Histogram	Color	Opacity	Hectares (公顷)
0	out of image	39959249		1	399592
1	permanent water	8110274		1	81102.7
2	flooded area	2042717		1	20427.2
3	other area	16284345		1	162843

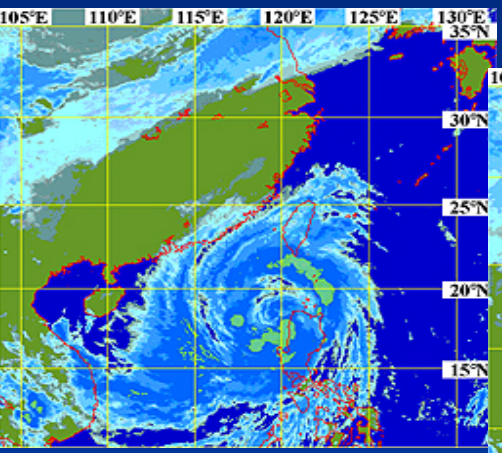
Open Layer

10月04日23时52分

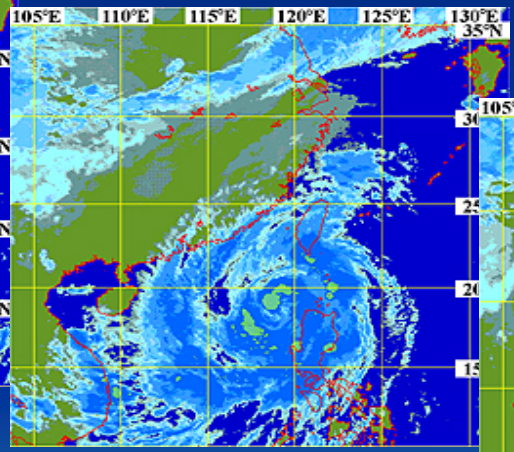


10月5日22时08分

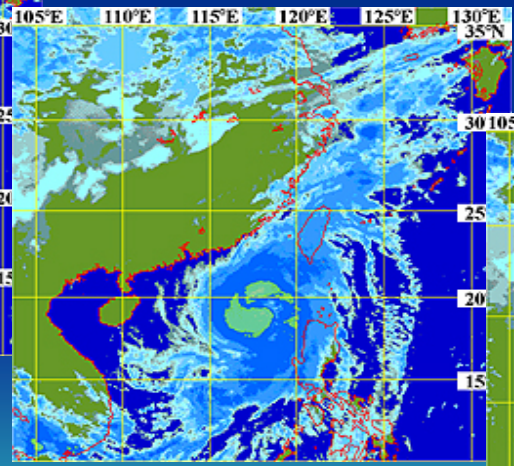




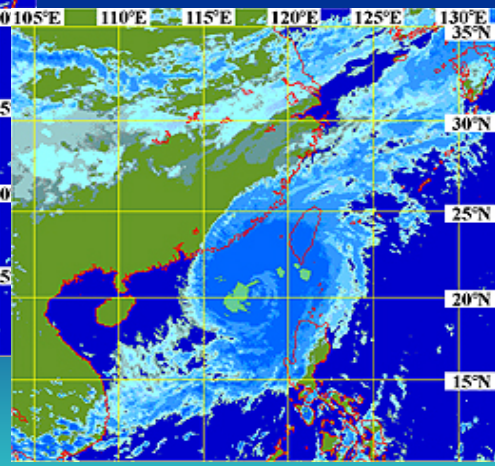
10月6日01时32分



10月6日7时32分



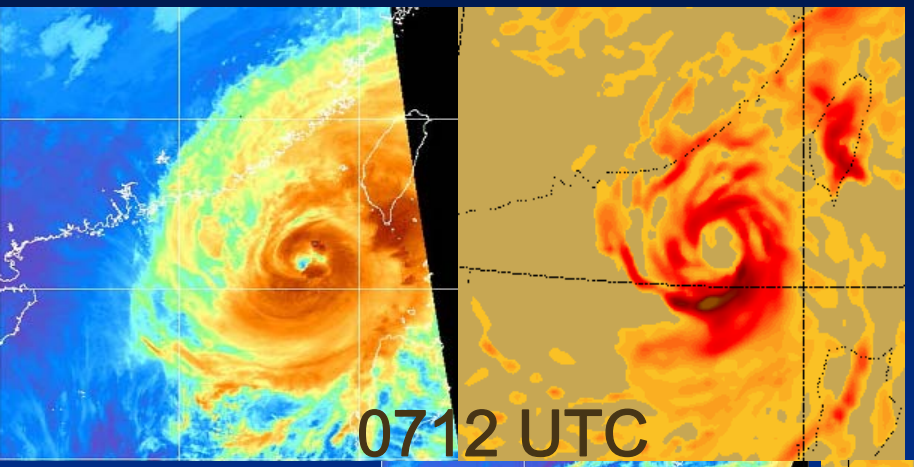
10月6日23时42分



10月7日13时32分

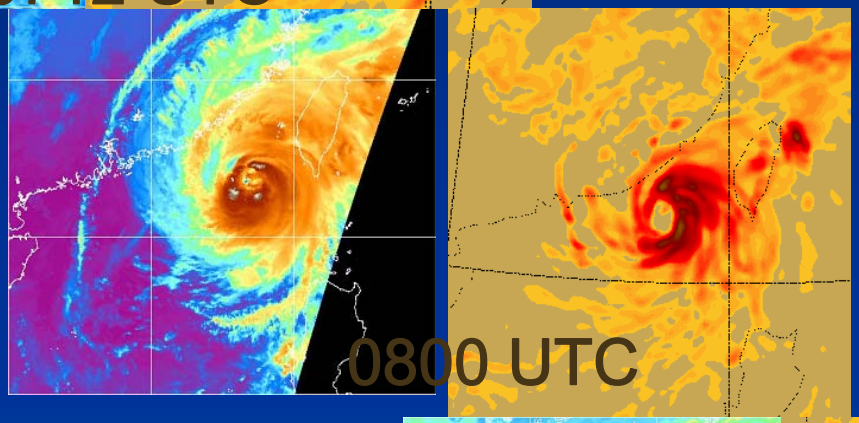
9914台风卫星云图演变

台风云系结构的演变和检验



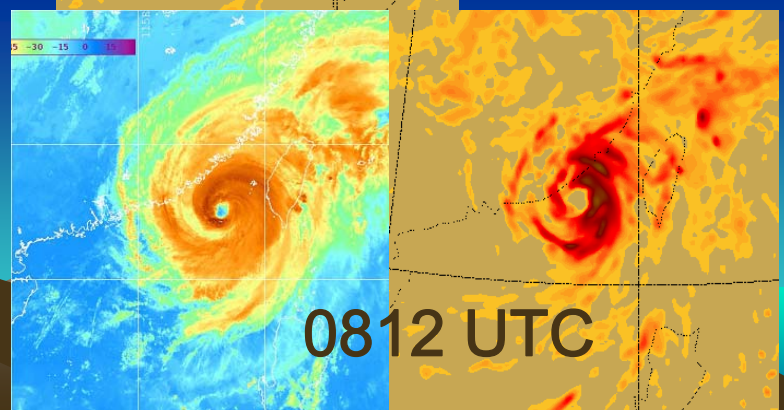
0712 UTC

实况

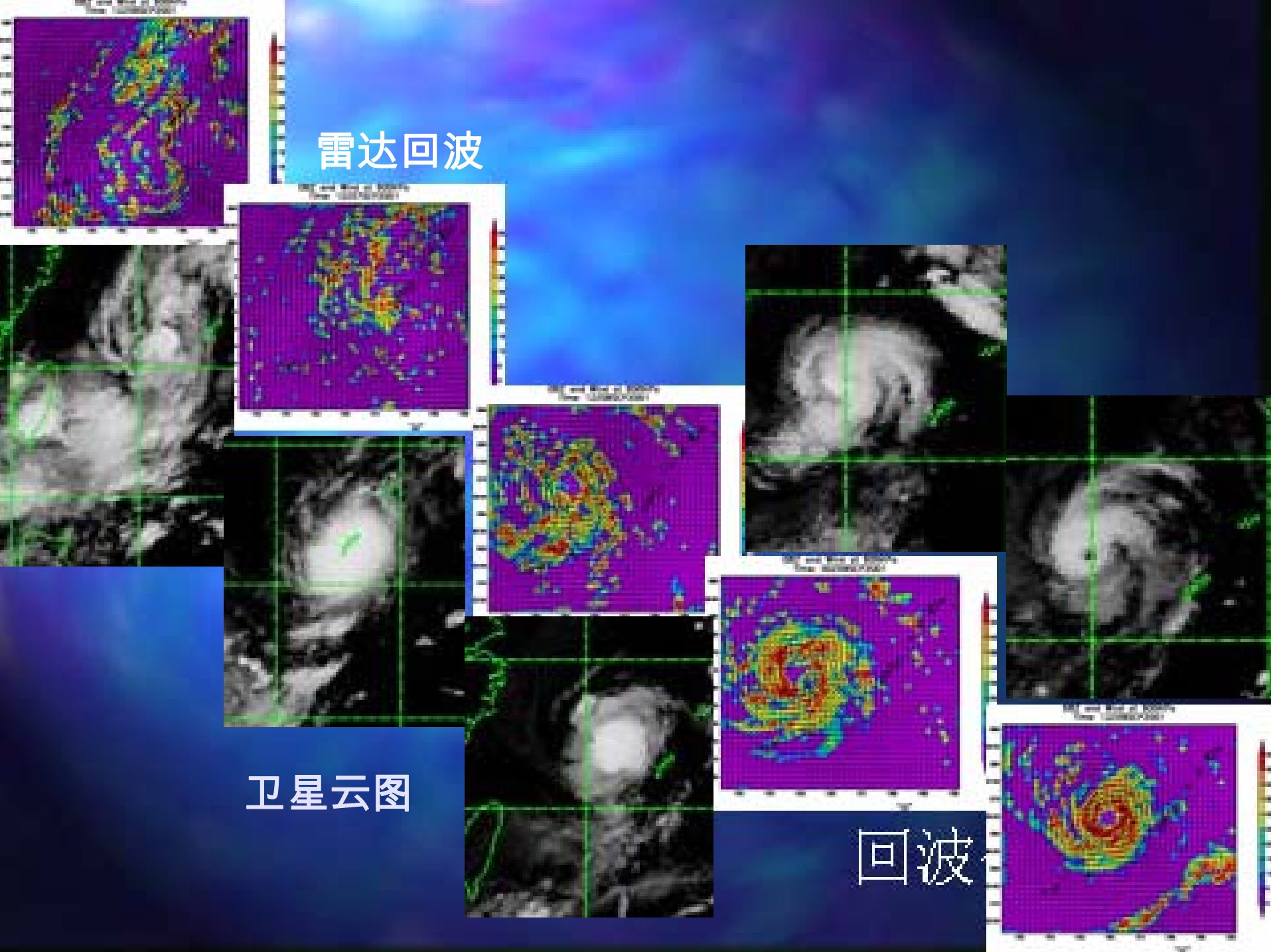


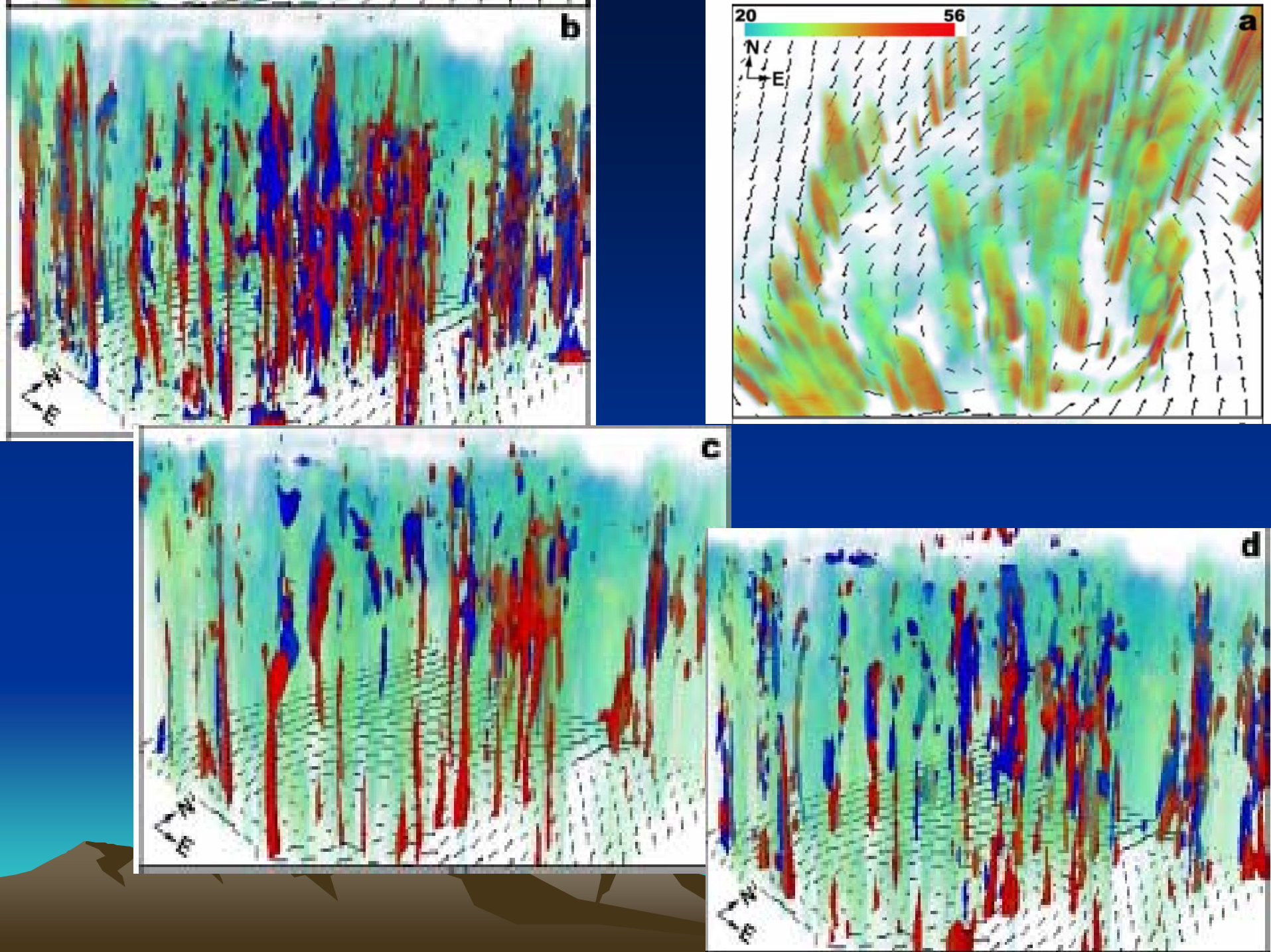
0800 UTC

AMSU试验



0812 UTC


雷达回波
卫星云图
回波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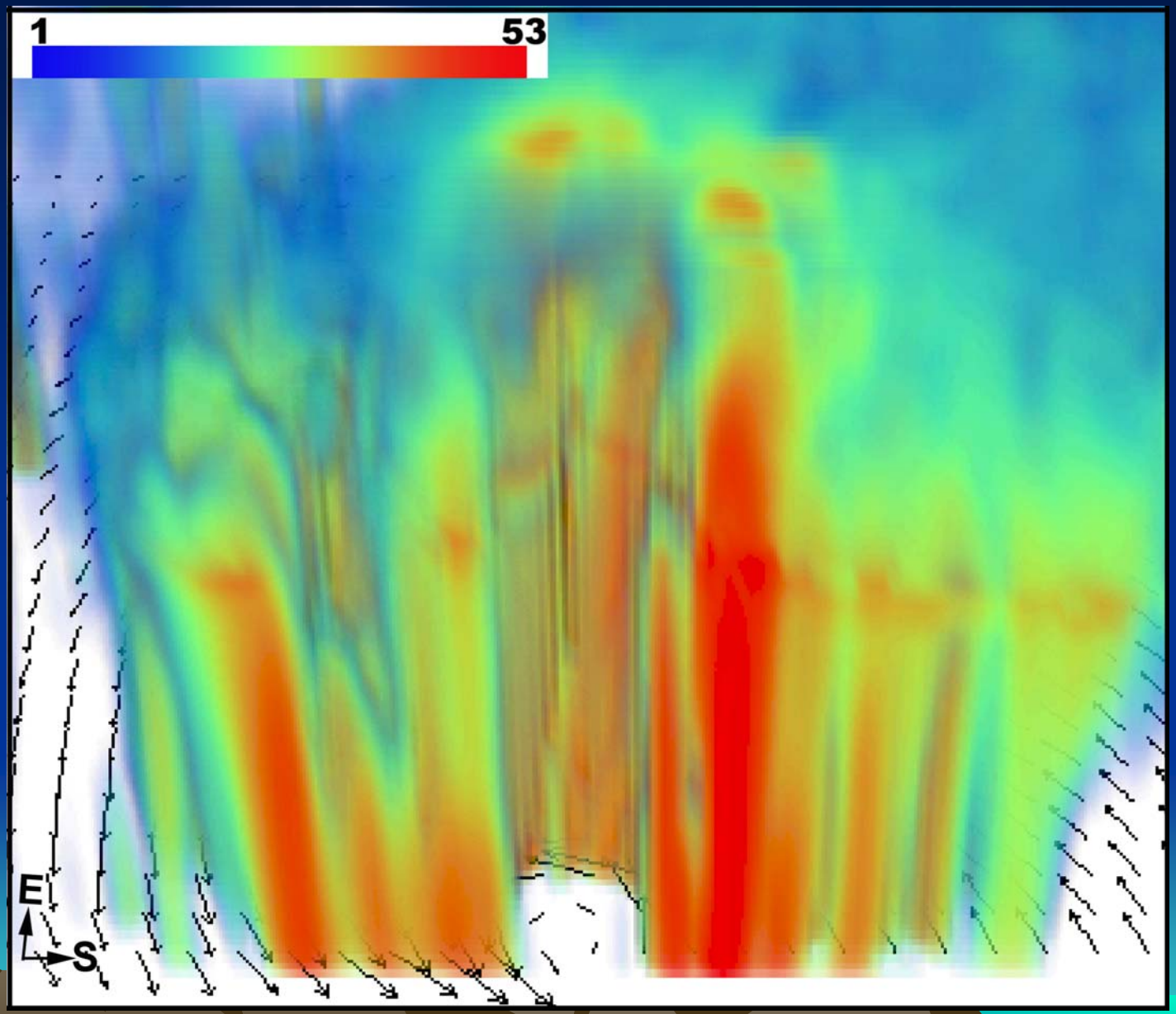
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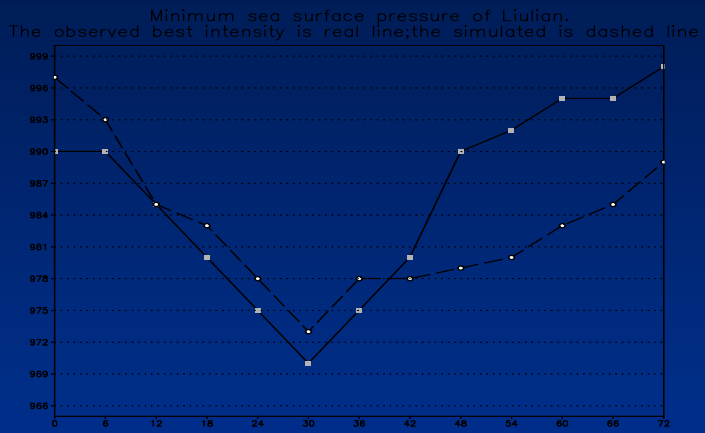
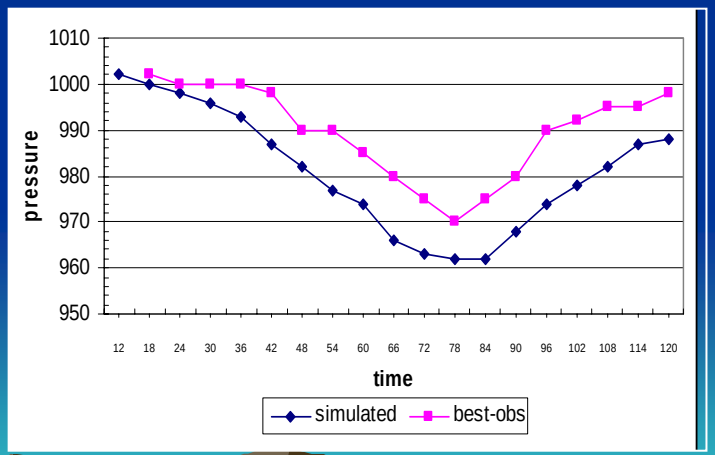
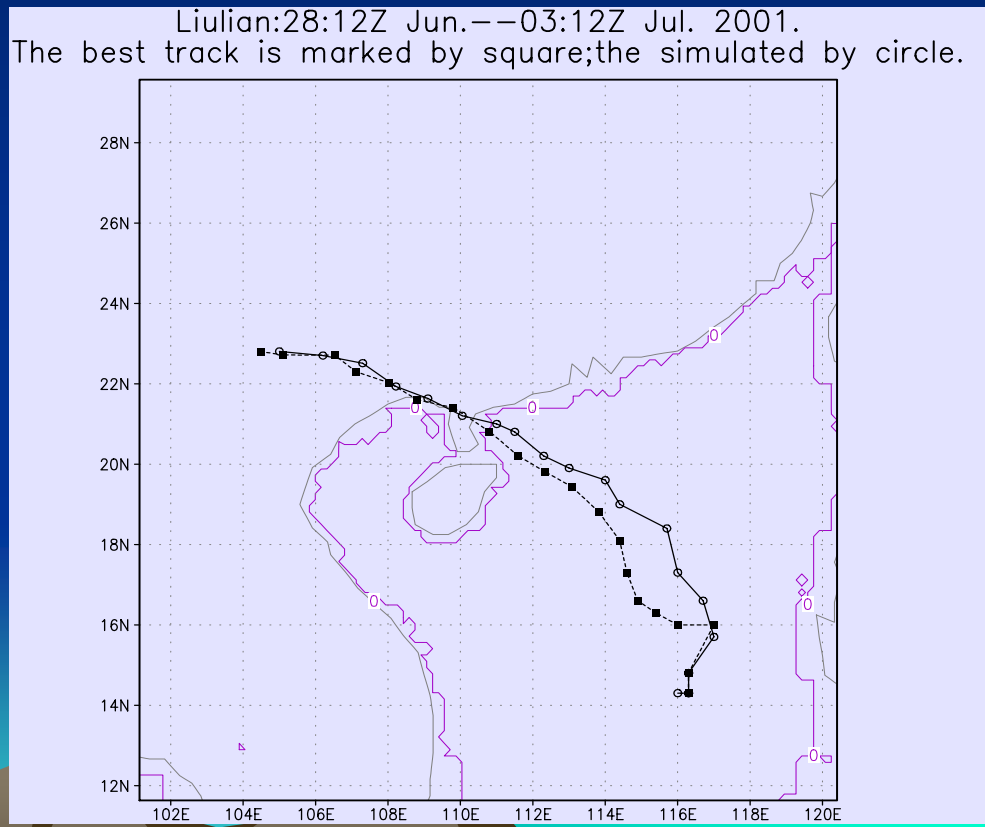
已完成的预模拟

Fine domain 中心最低气压







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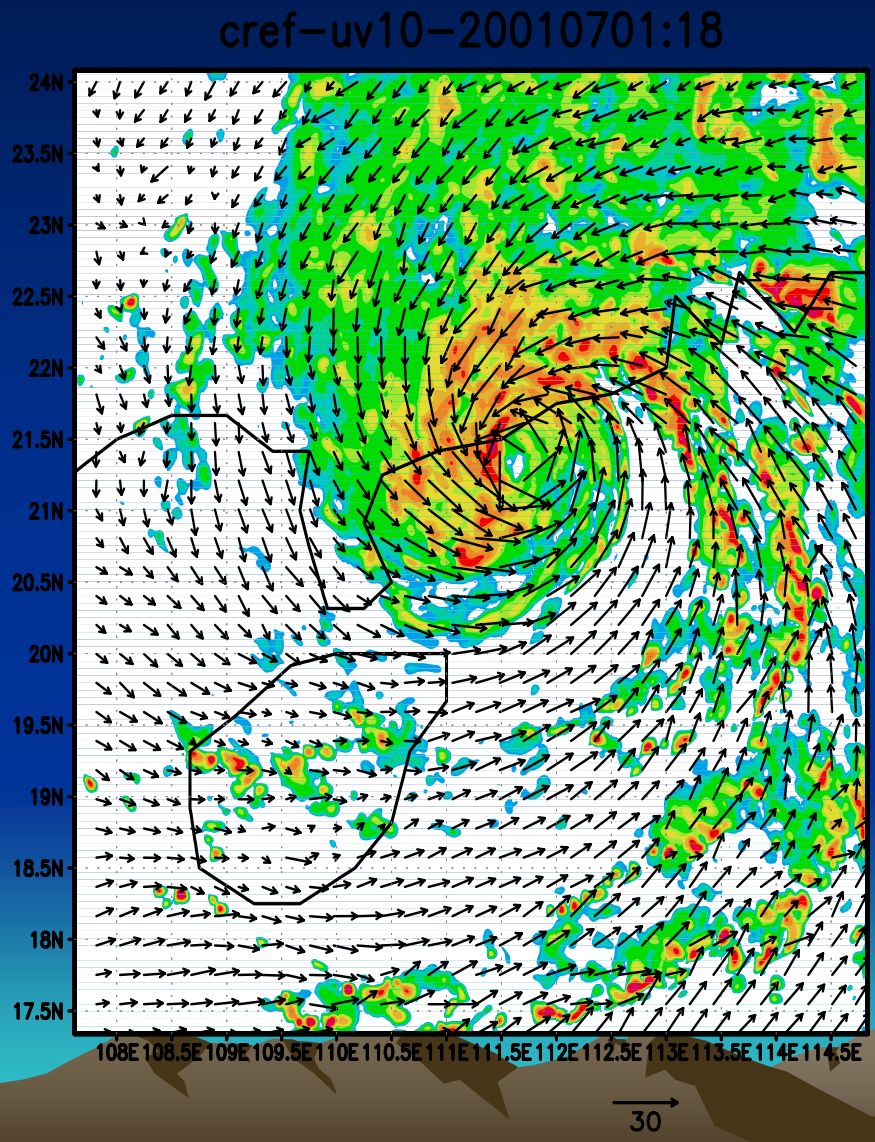

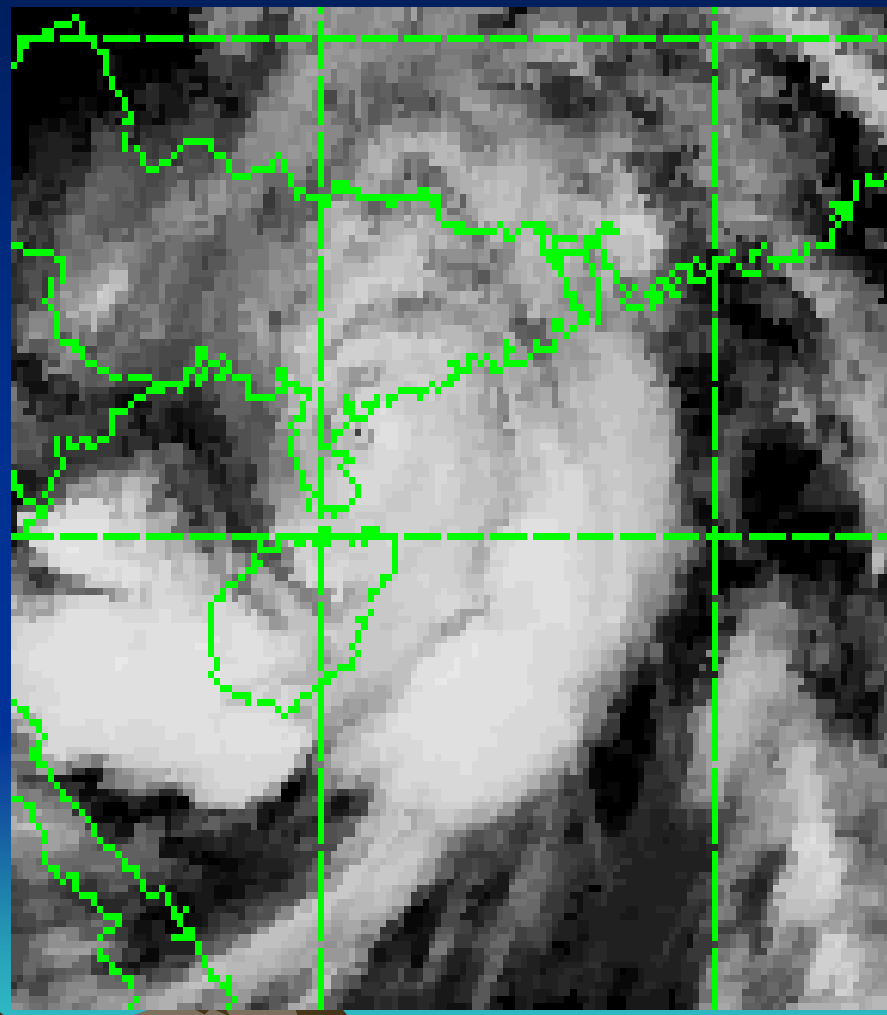

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Prof. Wang Angsheng Awarded the Highest DR Prizes in the World

Prof. Wang Ang-Sheng was born Sichuan Province of China in June 16, 1939. In 1963, he graduated from Chinese University of Science and Technology. Since 1963, he engages the Science of Disaster Prevention；Disaster Reduction；Safety，Disaster Reduction and Emergency Respond； Atmospheric Science；and Weather Modification. From 1990 to 2004, he was a Director of Experts Group of China

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4. The Strategies suggestion

A. From “disaster relief” into “disaster prevention”;
B. To suggest to set up a World Disaster Reduction Organization (WDRO) ;
C. To set up primary programs of global comprehensive disaster reduction;

etc.

Prof. Wang Ang-Sheng Awarded UN Award of Disaster Reduction ----The highest Award on Disaster Reduction in the World(1998).

A. From “disaster relief” into “disaster prevention”

Turn the current strategy that is mainly based on “disaster relief” into a strategy mainly based on “disaster prevention”.

B. To suggest to set up a World Disaster Reduction Organization

- **Set up a powerful general disaster surveillance and prevention organization at the world level.**
- **Although there are many international organizations who have been participating in disaster prevention and reduction work for a long time under the leadership of the UN, such as ISDR, UNDP, WMO, UNESCO, WB, WHO etc , and who achieve great successes, some problems still exist.**

- For example, as a result of insufficient staff and funds shortages in the ISDR Secretariat it is difficult for the organization to be responsible for the management of disaster reduction as a whole.
- Other organizations, have many individual tasks, these organizations may participate in disaster reduction work, but do not have the capacity to concentrate specifically on disaster reduction.

- Hence, there is no completely responsible and authoritative organization in the UN to coordinate the work of natural disaster surveillance and prevention from the countries of the world, such as the WTO managing international trade or the WB managing international finance.

- We suggest that,:
- 1. Relying on national disaster reduction committees (or leading groups) established already in more than 140 countries and areas in the world;
- 2. Taking ISDR and other UN (WMO, WB, WHO and so on.) organizations as bases;

- To set up a World Disaster Reduction Organization (WDRO) , or a responding organization.

- As headquarters to be responsible for the construction and operation of international severe disaster warning systems and to coordinate the countries of the world in disaster surveillance and prevention with a united force, in the same manner as the WTO, WB, WMO, and WHO. At the same time, we promote the establishment and perfection of national integrated disaster reduction organizations in the countries of the world.

C. To set up primary programs of global comprehensive disaster reduction;

- **By coordination and consultation between WDRO and corresponding organizations such as the WB, WMO, UNESCO, etc., we seek to gradually set up primary programs of global comprehensive disaster reduction, and to encourage and promote governments in various countries and continents to set up national and regional major programs of comprehensive disaster reduction, so as to actually push forward disaster reduction work globally.**

Thank You !

谢谢！