

未來百年氣候變遷

柳中明

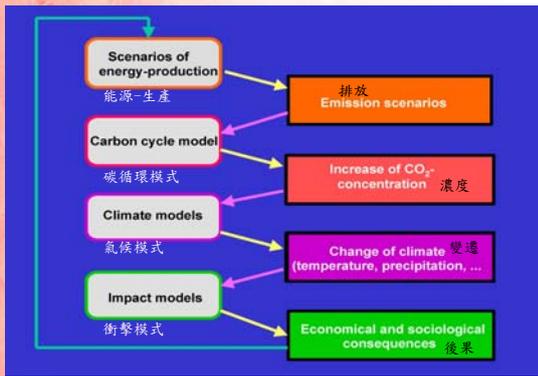
- 未來情境設定
- 未來氣候變遷預期

討論題綱：

(a)想像百年後台灣的人口、社會、環境與經濟。(b)想像百年後台灣的氣候與生活變化。

一、未來情境設定

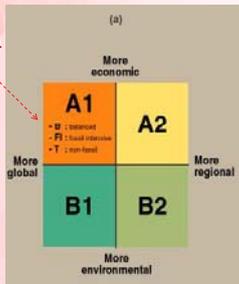
情境的重要性



IPCC SRES



- B: 平衡
- F1: 化石燃料強化
- T: 不需要化石燃料



強調區域發展與經濟成長，乃相對於強調全球化與環境保護？

為什麼？

情境 人口 經濟 環境 平等 科技 全球化

Scenario	Population	Economy	Environment	Equity	Technology	Globalization
A1FI	↘	↗	↘	↗	↗	↗
A1B	↘	↗	↗	↗	↗	↗
A1T	↘	↗	↗	↗	↗	↗
B1	↘	↗	↗	↗	↗	↗
A2	↗	↗	↘	↘	↗	↘
B2	↗	↗	↗	↗	↗	↘

A1: A world of rapid economic growth and rapid introductions of new and more efficient technologies

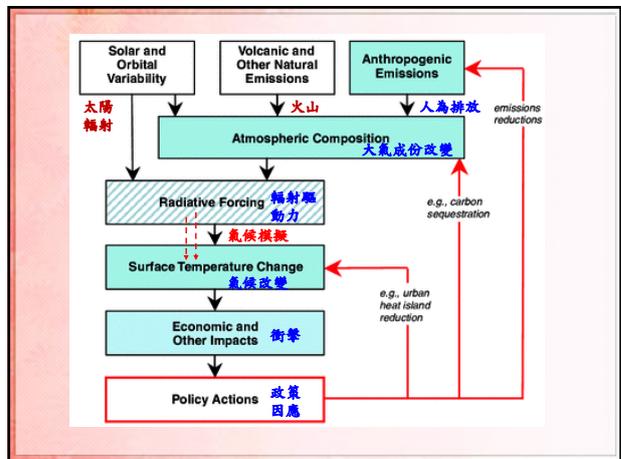
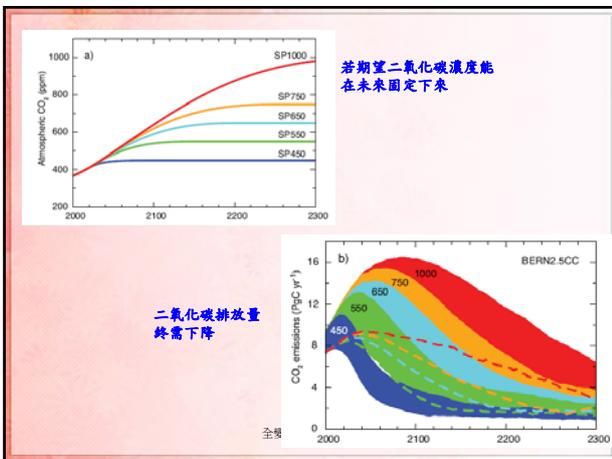
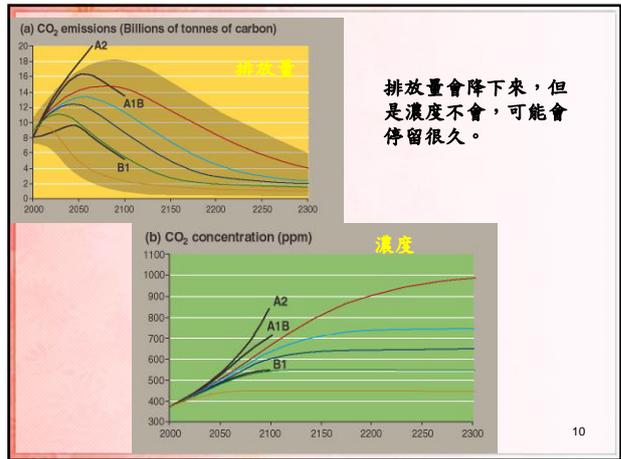
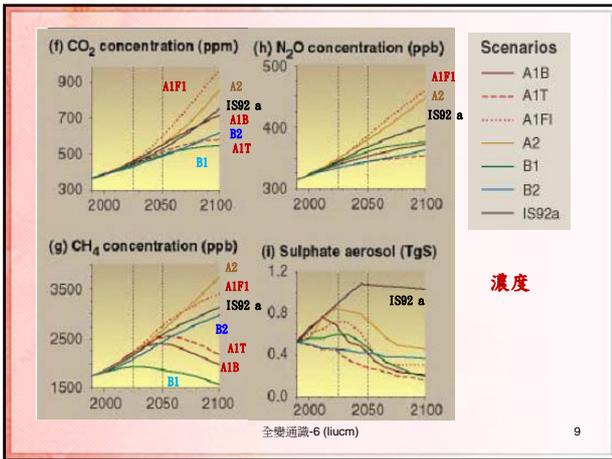
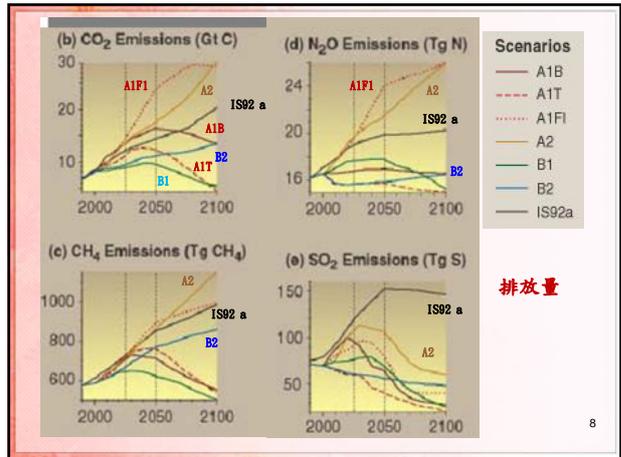
A2: A very heterogenous world with an emphasis on family values and local traditions

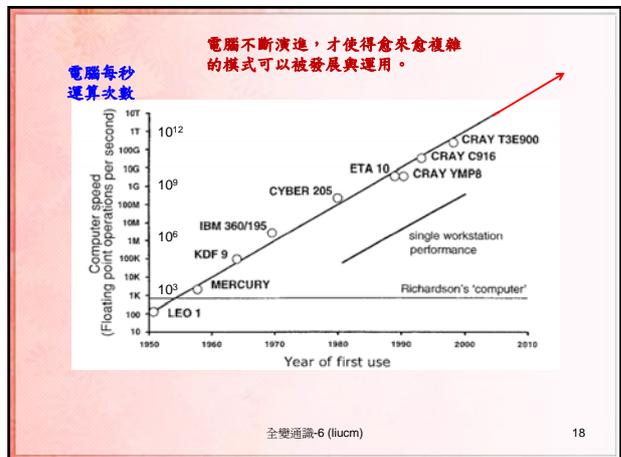
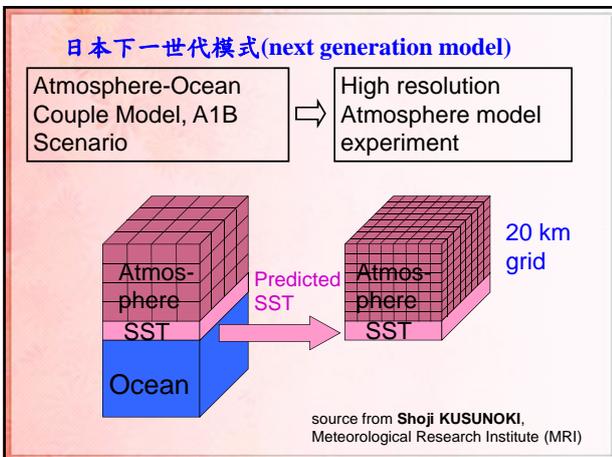
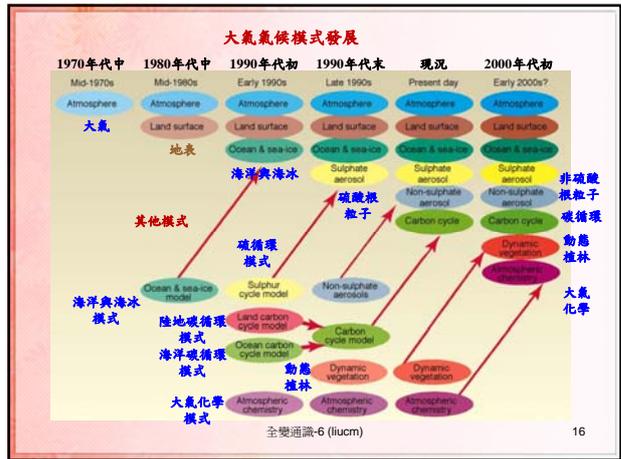
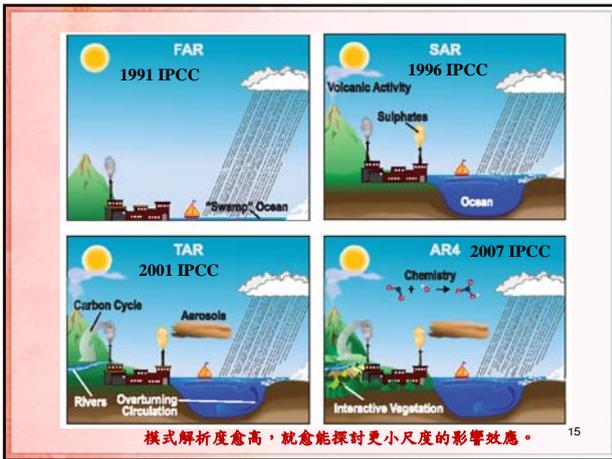
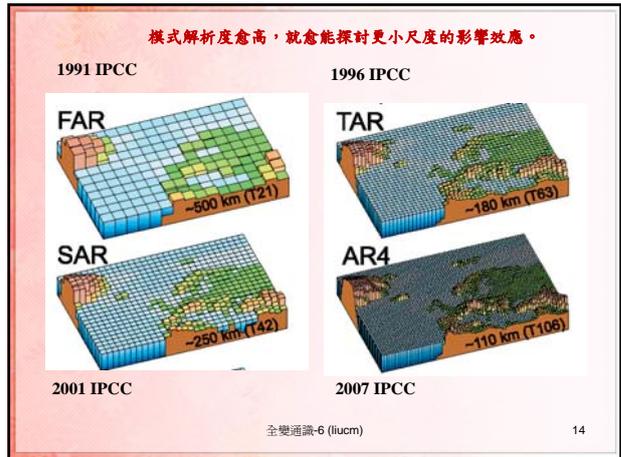
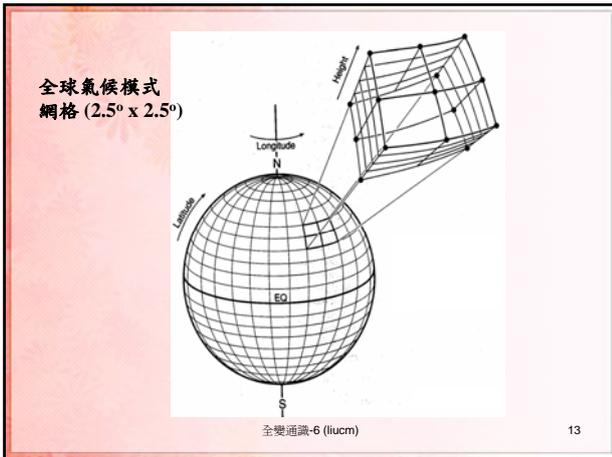
B1: A world of „dematerialization“ and introduction of clean technologies

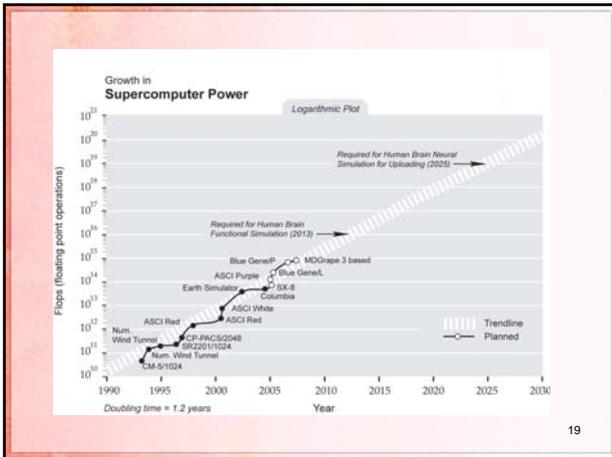
B2: A world with an emphasis on local solutions to economic and environmental sustainability

IS92a: „business as usual“ scenario (1992)

全變通識-6 (liucm) 7



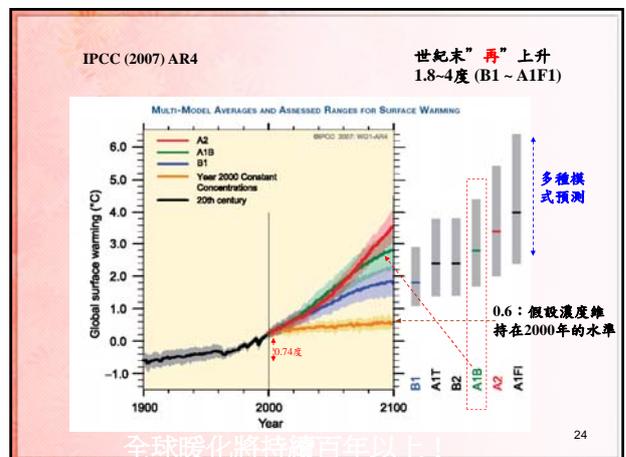
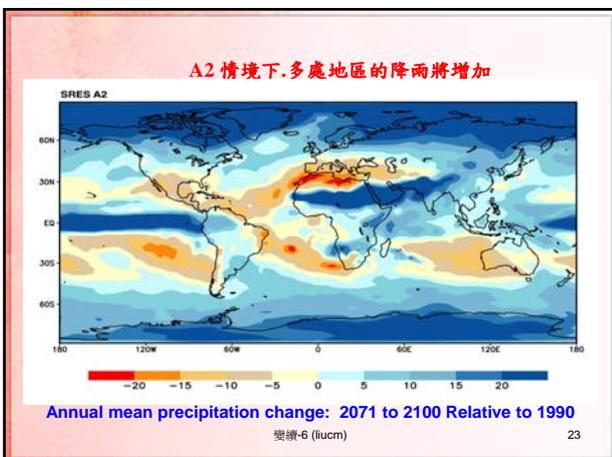
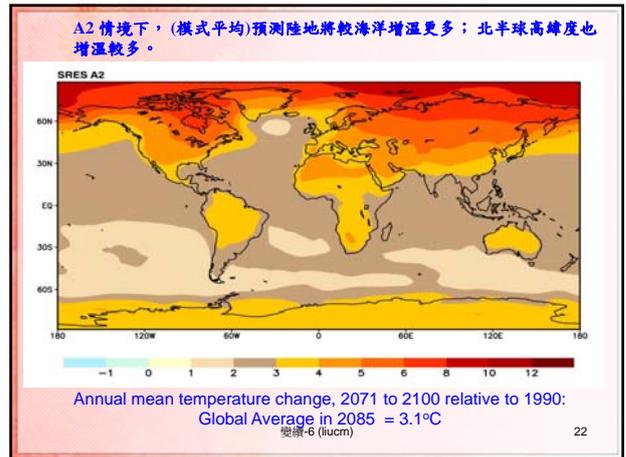
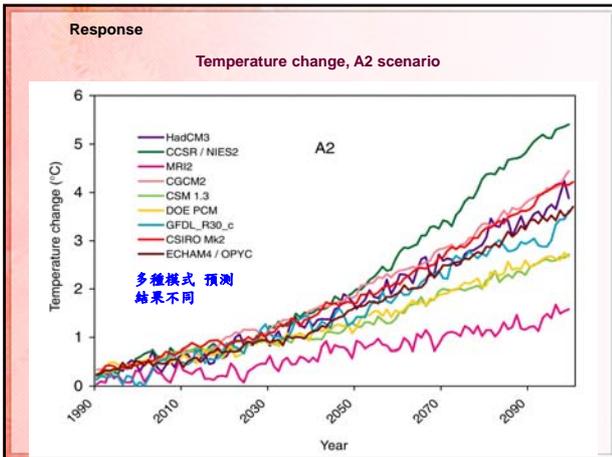


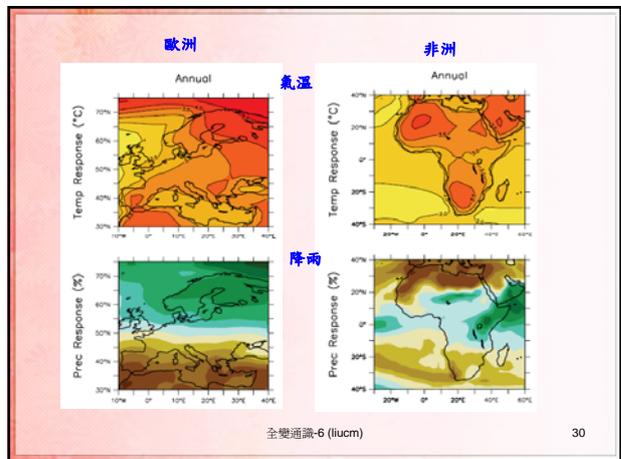
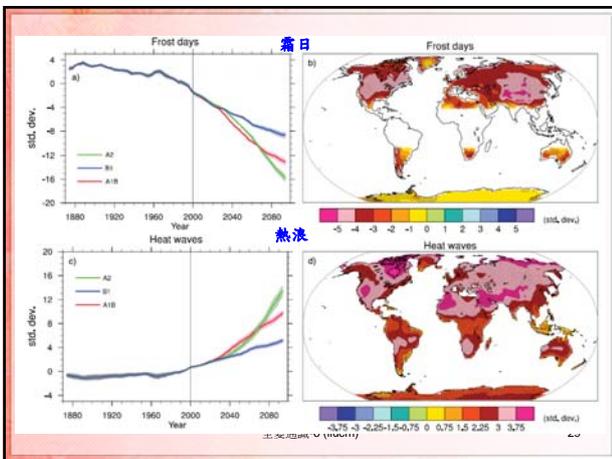
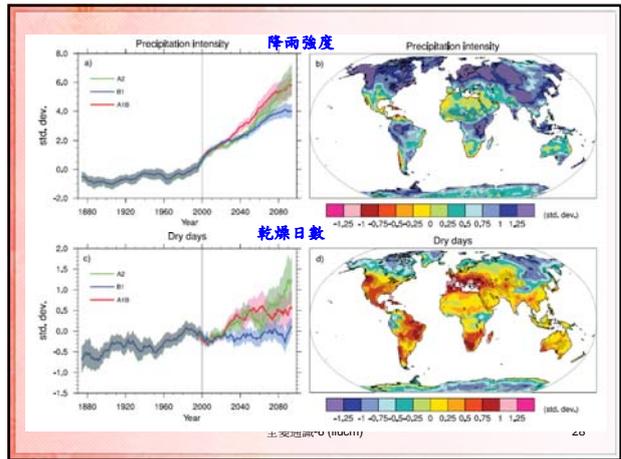
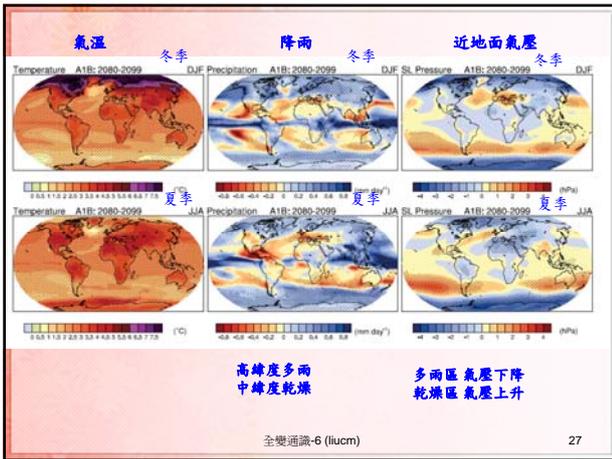
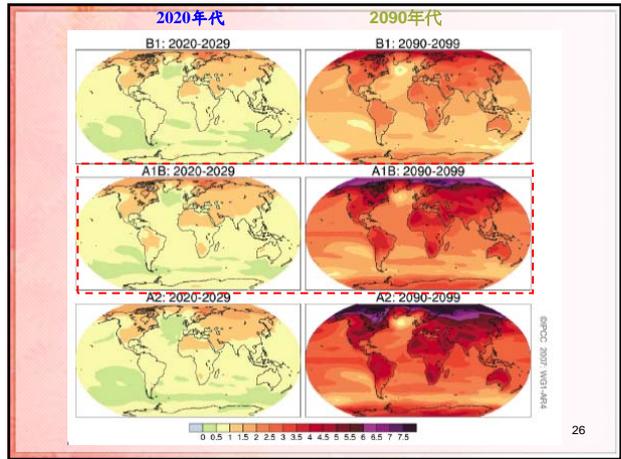
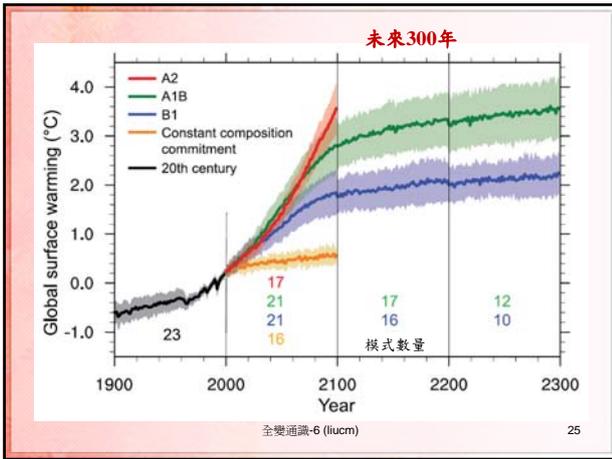


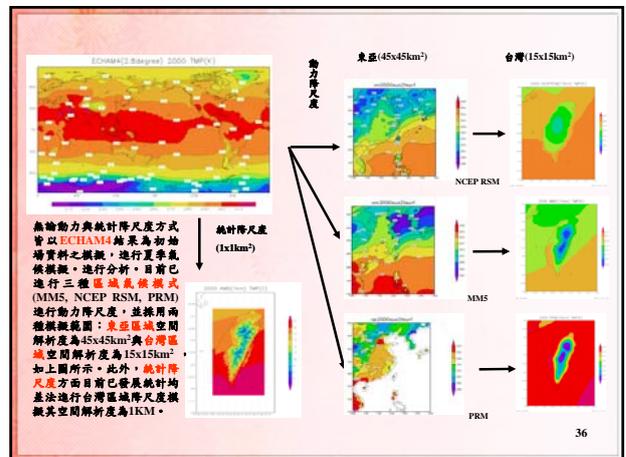
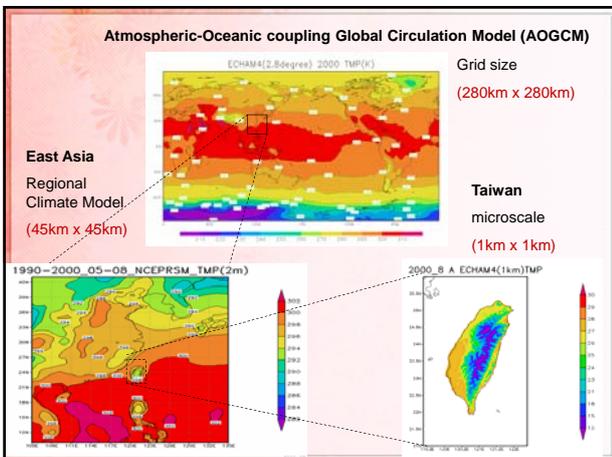
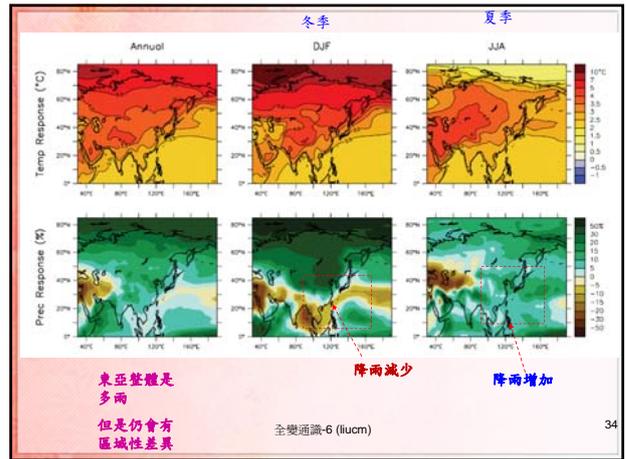
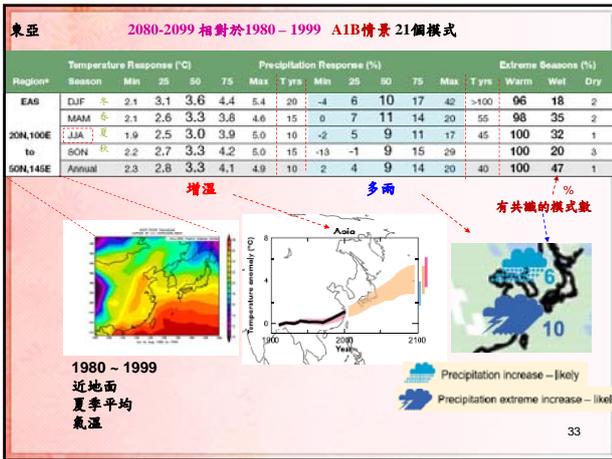
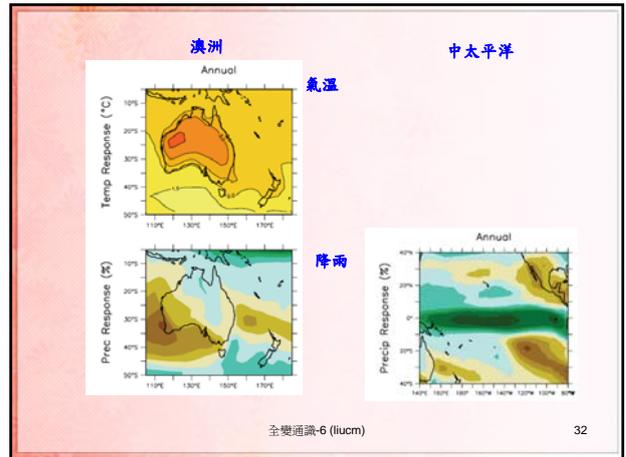
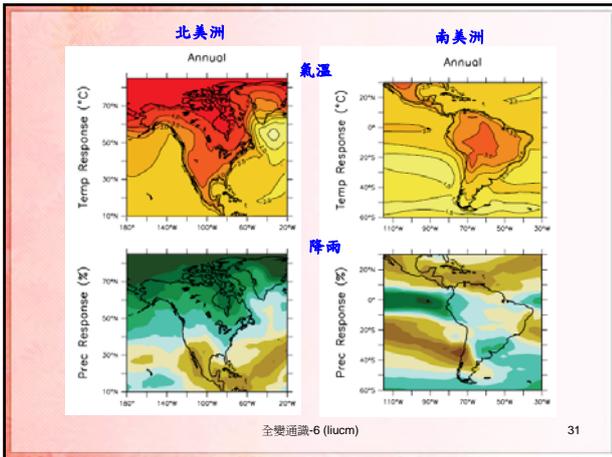
二、未來氣候變遷預期

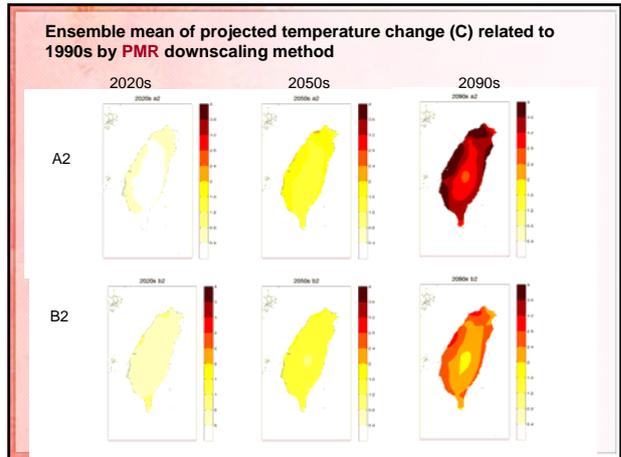
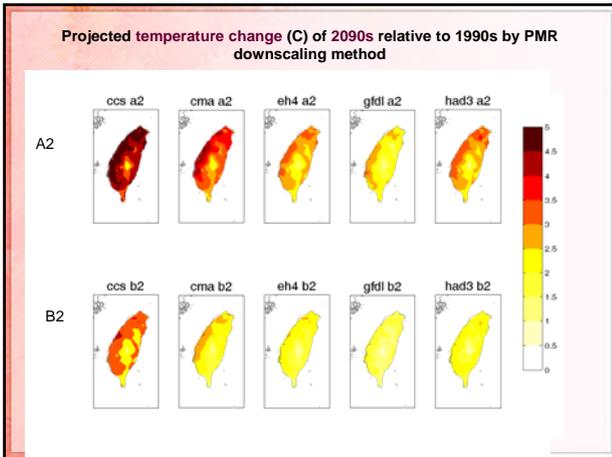
全變通識-6 (liucm)

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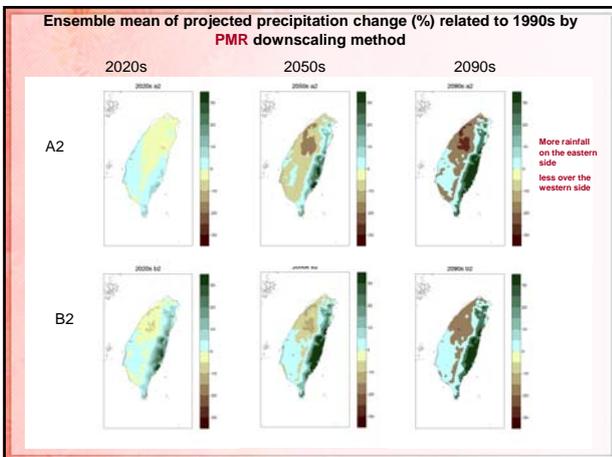
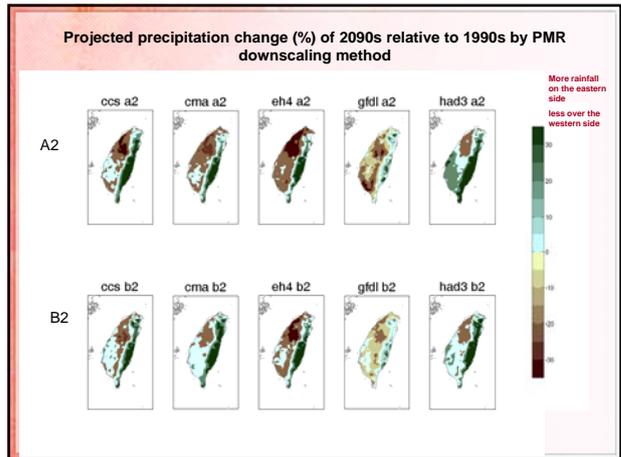


A2					
decade	northern	central	southern	eastern	island
2000s	0.11	0.09	0.11	0.10	0.10
2010s	0.24	0.22	0.27	0.29	0.27
2020s	0.36	0.35	0.38	0.39	0.38
2030s	0.57	0.62	0.76	0.75	0.75
2040s	0.84	0.90	1.06	1.08	1.06
2050s	1.18	1.33	1.59	1.68	1.61
2060s	1.54	1.66	2.01	2.02	2.01
2070s	1.89	2.04	2.46	2.47	2.45
2080s	2.15	2.35	2.77	2.87	2.80
2090s	2.62	2.79	3.34	3.37	3.34

Temperature change with respect to 1990s

B2					
decade	northern	central	southern	eastern	island
2000s	0.17	0.18	0.28	0.24	0.26
2010s	0.34	0.37	0.47	0.44	0.45
2020s	0.51	0.53	0.63	0.58	0.62
2030s	0.66	0.72	0.90	0.84	0.88
2040s	0.94	0.99	1.25	1.17	1.21
2050s	1.12	1.19	1.45	1.48	1.46
2060s	1.18	1.33	1.58	1.59	1.59
2070s	1.48	1.58	1.91	1.94	1.92
2080s	1.62	1.79	2.15	2.14	2.14
2090s	1.79	1.93	2.31	2.36	2.32

Warmer southern and eastern side and along the coast



1. 東亞與大陸北方降雨增加，但是降雨時間縮短，所以各國都擔心豪雨頻繁(逕流量大)、乾旱出現、水汽蒸發量大與水資源調配困難。
2. 我國需由全球模式降尺度到台灣地區，預估誤差可能偏大。初步得到：西岸降雨減少，東岸增加。
3. 要改善降雨估算誤差，需發展高解析度的區域氣候模式，但國內缺乏相關資源。

討論題綱：

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註：平時討論成績佔總成績的 40%：依每次參加分組(約六人一組)討論的過程與結論評分。