Distribution and Characters of Gas Hydrate by geological controls on Southwestern Taiwan


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OUTLINE

• Introduction

• Seismic Characteristics & BSR-type

• Fluid Activities & Heat flow

• Discussion & conclusions
Introduction
Introduction

- High-resolution multichannel seismic (MCS)
  - 24 or 48 Channel solid streamer
  - 475 to 775 in$^3$ Air gun array
- Large-offset seismic reflection
- OBS
- Sub-bottom
  - Underway 3.5kHz
  - Chirp sonar
Introduction
BSR-type(1)

- Ridge-type
- A.C. > widespread
- E.G. > thrust
BSR-type(2)

- Basin-type
  - Angle
  - Parallel
BSR-type(3)

- Submarine-canyon type
- Apparent syncline
BSR-type(4)

- Continental slope type
- NE slope
BSR-type(4-2)

- SW Tainan slope
- Remnant ridge
BSR-type(6)

- Blanking without BSR
  - Gas
  - homogeneity
Heat flow

Shyu et al. (2006)
Fluid Activities
Discussion – distribution(1)
Discussion – distribution (2)
Discussion(3)

- Migration Path
- BSR vs. Bedding
- With fault
- G 22.23.24
Liu, 2006
• 50% (Liu, 2006)
• Upper limit of depth: 500m
• Distribution

Lin, 2009
• 30% in the accetionary
  – 35% rear segment
  – 28 frontal segment
• 20% in the continental
• Upper limit of depth: 1000m
• Distribution
Conclusion

- Gas under the BSR
- BSR distribution & type
- Fluid Activities & Heat flow
- Migration path