


Taiwan Chelungpu-fault Drilling Project (TCDP)



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台灣車籠埔鑽井計畫 TCDP

(Taiwan Chelungpu-fault Drilling Project)

總主持人：中央大學 蔡義本 (Y.-B. Tsai) 教授

共同主持人：中央大學 馬國鳳 (K.-F. Ma) 教授

中央大學 王乾盈 (C.-Y. Wang) 教授

中央大學 洪日豪 (J.-H. Hung) 教授

台灣大學 宋聖榮 (S.-R. Song) 教授

by Drill Chelungpu Fault

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- *Clear Scientific Target:*
 - *Achievable Drilling Target:*
 - *Well Defined Fault Plane:*
 - *International Interests:*

Scientific Hypothesis and Data Collection

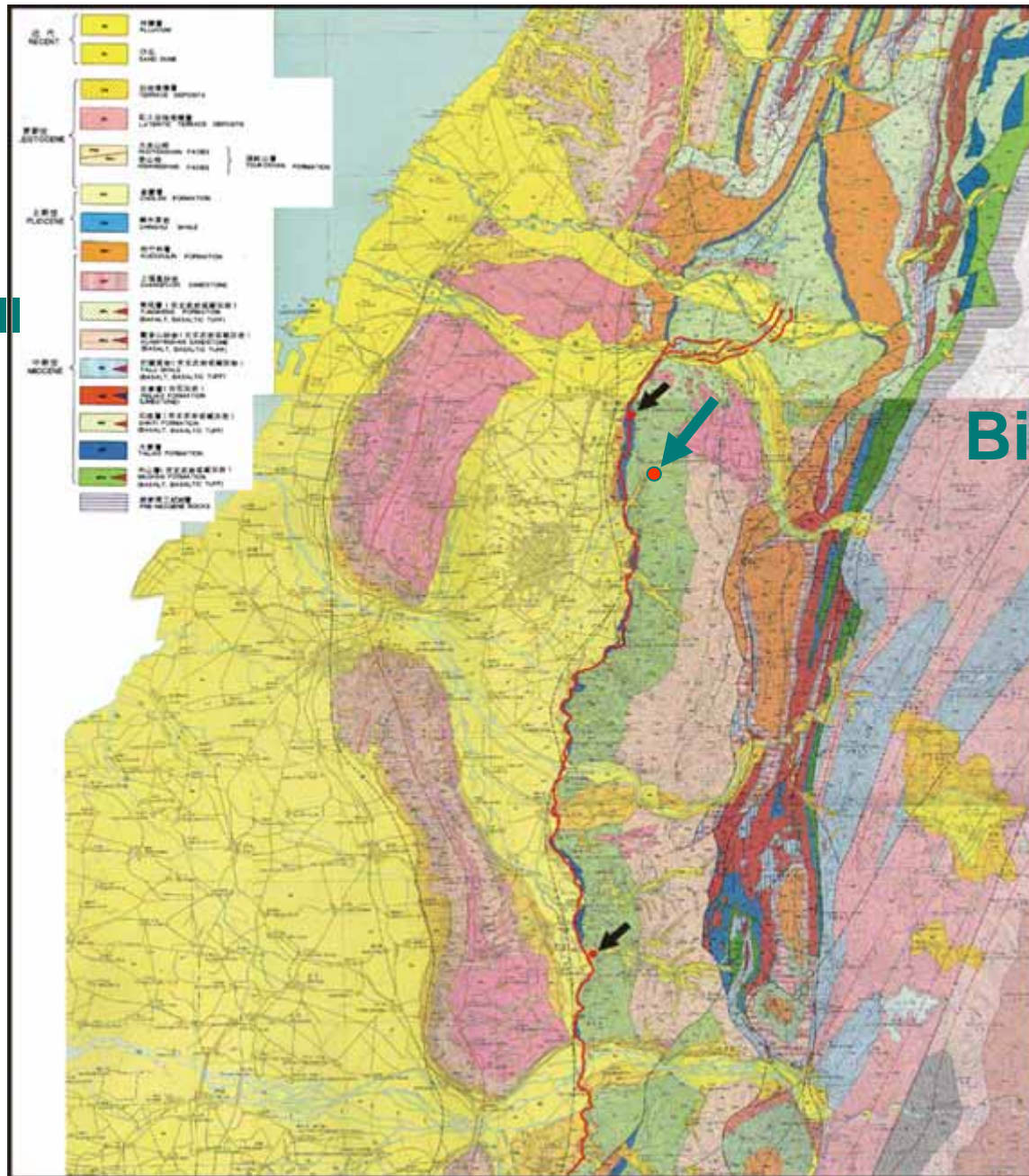
- *Hypothesis #1: Fault zone was lubricated while generating large slip and slip velocity.*
- *Hypothesis #2: Plate boundary fault is weak; i.e. slip under conditions of low resolved shear stress.*
- *Data Collection: Physical properties, chemistry and state of the fault zone after a large earthquake with anomalous large slip*

TCDP Time Table

- ✦ 2003/2-3: Final Drilling Site Selected (Takeng)
- ✦ 2003/4: ICDP Engineer's visit to Taiwan (Thomas Worehl)
- ✦ 2003/6: TCDP Pre-drilling workshop (6/23 USGS, 6/26 Taiwan)
- ✦ Before Drilling: Selection of Drilling Company (open bid), finalize on Oct. 16th. Selected drilling company: WonDa drilling company.
- ✦ 2003/10: Visit ICDP for DIS system (on going)
- ✦ 2003/10/21-22: TCDP Pre-drilling workshop, NCU
- ✦ 2003/11: ICDP Training Course (in Japan)
- ✦ 2003/12: Drilling (December 15, 2003)

TCDP Working Group

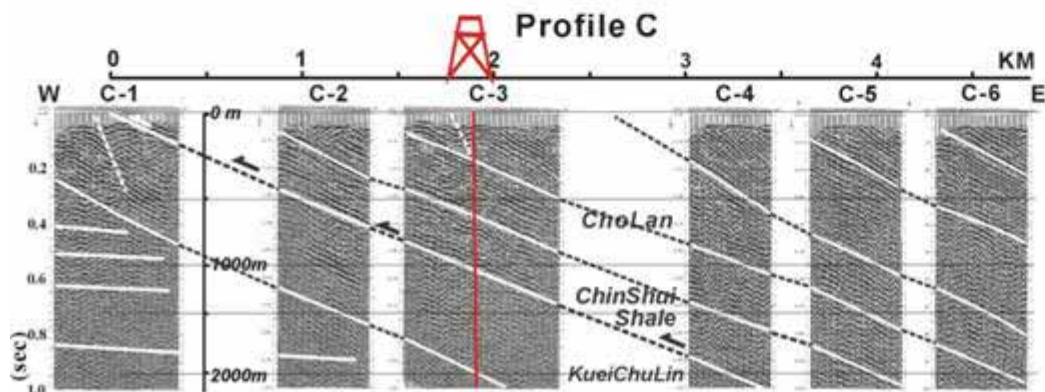
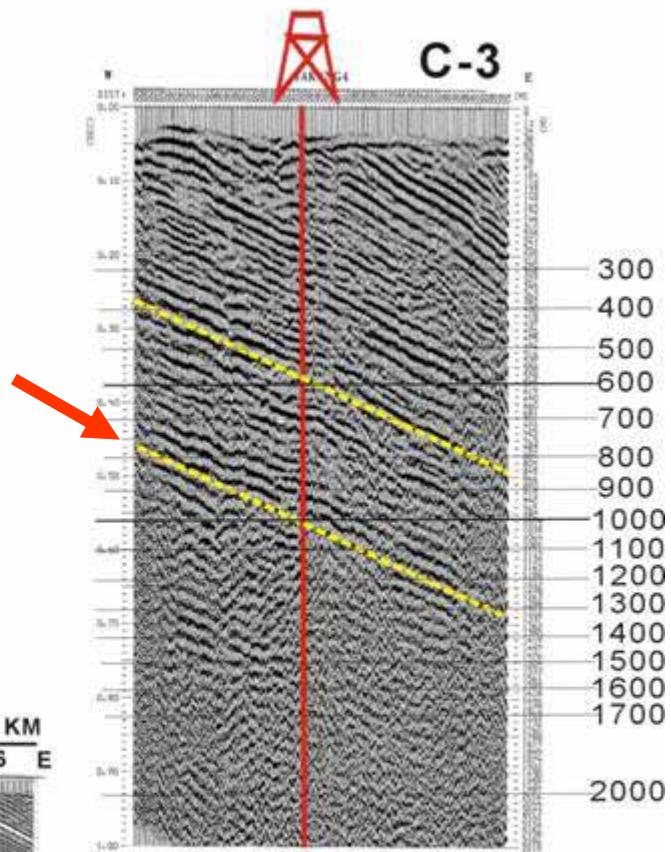
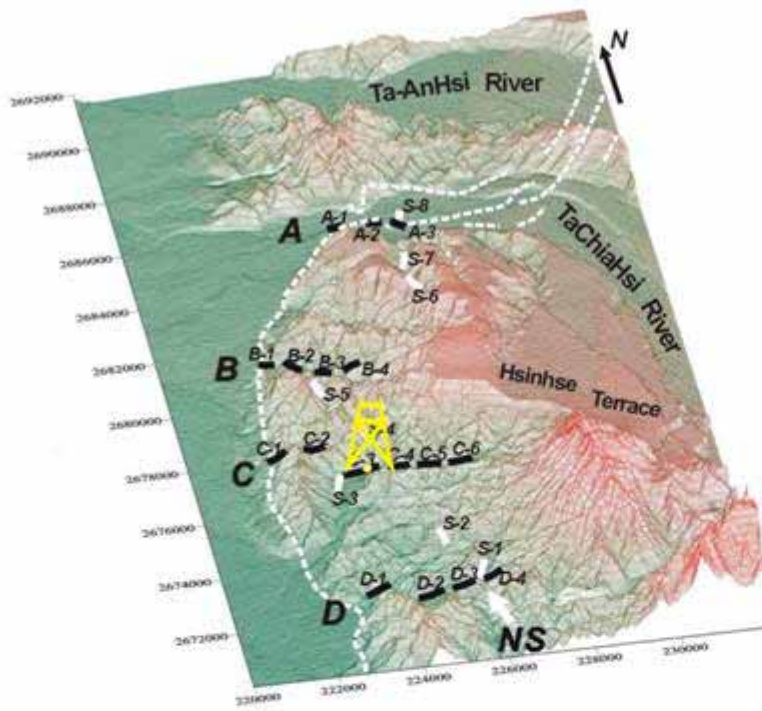
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- Site Characterization: Prof. C. Y. Wang at NCU
 - Seismic Reflection: C. Y. Wang
 - MT: C. C. Chen
 - Resistivity: P.H. Chen
 - Geological investigation: J. H. Hung, T.-S. Lin
 - On-site Drilling:J.-H. Hung at NCU
 - T.-Y. Yang at NTU
 - C.-Y. Wang at NCU
 - Core Measurement and Handling:S.-R. Song at NTU
 - J.-H. Hung at NCU
 - Logging and Borehole Experiment: C. Y. Wang at NCU
 - B.-S. Huang at IES
 - DIS system: K.-F. Ma at NCU



Fengyuan well
(450m)
豐原井

Bighole well
(2000m)
大坑井

Nantou well
(220m)
南投井



TCDP Pre-Drilling Workshop

- ❖ Drilling and Casing Plan: Drilling Company
- ❖ Lectures:
 - Stress Measurement and on-site drilling: Prof. Zoback Stanford University
 - Core Handling: Dr. Hirono JAMSTEC
- ❖ Non-conventional Logging : Schelungburger
- ❖ Hydro-fracture Experiment
- ❖ Working Group Discussion
- ❖ DIS System and
- ❖ Future Borehole Instrumentation (Thermometers, Seismometers and Pore Pressure measurement)

TCDP Overall Structure

- ❖ Drilling and Casing Plan: C. Y. Wang
two holes, Logging and Borehole monitoring (hydro-frac.)
- ❖ On-site facility: J.-H. Hung
on site geologists (shift)
Lists of Scientific Targets (Participants, call for proposal)
- ❖ Core Measurement: S.-R. Song
core distribution: proposal to core committee
Inter-correlation of two holes: MST from Dr. T.-G, Lee and equipment from JAMSTEC
core policy: three priorities core committee
proposal process: core committee (proposal deadline)
JAMSTEC/TCDP interaction:
- ❖ Data Information System: K.-F. Ma
TCDP science team (same policy to sample distribution, Data distribution (Core and Logging data)
TCDP Taiwanese website and ICDP website

Advertisement: limited or broad
EOS article

Borehole Observatory: Long-term monitoring

Proposal deadline

- ❖ On-site description (end of November)
- ❖ Core A (half an year, tight with NSC deadline)
- ❖ Core B

Thank You