

Workshop Programme (as of 9 March 2009)

Sunday 22 March

Travel to Franz Josef via Toaroha R., Styx R., Wanganui R., Harold's Ck.

1830 Provocative talks: scientific drilling and seismogenesis (20 minutes each) *Harms*

1. Welcome, opening remarks, outline of workshop goals *Sutherland, Townend*
2. Results and challenges of scientific drilling into active faults *Zoback*
3. Fault rock evolution and fault rheology between the BDT and the surface *Sibson*

1930 Dinner

Monday 23 March

0830 Introduction and scene-setting (30 minutes each) *Sibson*

4. Tectonic setting *Sutherland*
5. Contemporary deformation in the South Island *Beavan*
6. Central South Island geology *Cox*

1000 Coffee

1030 Introduction and scene-setting (continued; 30 minutes each) *Prior*

7. Hanging wall deformation and mechanisms of exhumation during oblique collision *Little*
8. Alpine fault structure and kinematics: how do faults accommodate oblique deformation? *Norris*
9. Deep-crustal seismic observations: what does the Alpine fault look like at depth? *Stern, Bannister*

1200 Lunch

1300 Introduction and scene-setting (continued; 30 minutes each) *Thurber*

10. Insights from numerical modelling into crustal deformation and temporal changes in BDT *Ellis*
11. Electromagnetic images of the central Alpine fault *Wannamaker*
12. The Alpine fault as a global laboratory *Norris*

1430 Coffee

1500 Scientific drilling (30 minutes each) *Gledhill*

13. Matching scientific, engineering, and logistical demands in large-scale drilling projects *Harms*
14. Scientific drilling technology: key components, dependencies, and implications *Wöhrle*
15. Key lessons from SAFOD: site characterisation, science planning, execution *Hickman*
16. Borehole geophysical fields and insight into fault structure at depth *Malin*

1700 Free time

1830 Provocative talks: geodynamical modelling at various scales (20 minutes each) *Teagle*

17. Hydrogeological models of the central Alpine fault *Upton*
18. What geodynamical modellers need to know about plate boundaries and rheology *Regenauer-Lieb*
19. Orogenesis and orography — mountain-building in the Southern Alps *Braun*

1930 Dinner

Tuesday 24 March

- 0830 Outstanding issues in EQ physics and faulting (30 minutes each)** *Hickman*
20. What we know and don't know about large continental earthquakes *Ellsworth*
21. Challenges of relating microstructural observations to in situ deformation processes *Blenkinsop*
22. Physics and chemistry of fluid–rock interaction in active fault zones *Saffer*

1000 Coffee

1030 Break into groups

1200 Lunch

1300 Reporting and discussion

1430 Coffee

1500 Reporting and discussion (continued)

1630 Free time

- 1830 Provocative talks: faulting and fluid flow in the brittle crust (20 minutes each)** *Cox*
23. Characterising and dating shallow fault mineralisation and melt processes *van der Pluijm*
24. Fluid–rock geochemistry: how does retrogression bias our image of the deep crust? *Teagle*
25. Hydrogeology and fluid geochemistry during the seismic cycle *Manga*

1930 Dinner

Wednesday 25 March¹

- 0830 Fieldtrip south (Hare Mare Ck, Franz Josef Glacier)** *Little, Norris, Toy*
1330 Fieldtrip north (Whataroa R, Gaunt Ck) *Little, Norris, Toy*
1830 Provocative talks: the state of the art in scientific drilling (20 minutes each) *Zoback*
26. Downhole logging and wellbore testing: what's possible and what it involves *Schmitt*
27. Real-time mud gas chemistry analysis *Erzinger*
28. Core collection, handling, and analysis: lessons from the Nojima and Chelungpu faults *Boullier*
- 1930 Dinner (Speights Landing Bar and Restaurant)**

¹ The half-day fieldtrips north and south of Franz Josef may be run on a different day (or on separate days) depending on the weather. Wet-weather gear, warm clothing, boots and sun protection will be necessary.

Thursday 26 March

- 0830 Review of preliminary scientific questions** *Sutherland, Townend*
- 1000 Coffee**
- 1030 Break into groups**
- 1200 Lunch**
- 1300 Reporting and discussion**
- 1430 Coffee**
- 1500 Reporting and discussion (continued)**
- 1630 Free time**
- 1830 Provocative talks: integrated analysis of borehole and other data (20 min. each)** *Ellsworth*
29. Preliminary lessons from NanTroSEIZE — reconciling scientific and logistic demands *Tobin*
30. The multifaceted role of seismology at different points in a drilling programme *Thurber*
31. Seismic imaging of active fault structures: lessons and suggestions *Buske*
- 1930 Dinner (with local guests)**

Friday 27 March

- 0830 Distillation and concrete action points** *Tobin, Zoback*
32. Project management and the role of ICDP *Harms*
33. First-cut synthesis of workshop results and action plan *Sutherland, Townend*
- 1000 Coffee**
- 1030 Distillation and concrete action points (continued)** *Sutherland, Townend*
- 1200 Lunch**
- 1300 Free time**
- 1930 Dinner**

Saturday 28 March

- 0830 Departure for Christchurch and Dunedin**

List of Participants (as of 9 March 2009)

Surname (● denotes speaker or discussion rapporteur)	First name	Institution	Country
Ashby	Jeff	Websters Drilling	NZ
Bannister●	Stephen	GNS Science	NZ
Batt	Geoff	University of Western Australia	Australia
Beavan●	John	GNS Science	NZ
Berryman	Kelvin	GNS Science	NZ
Blenkinsop●	Tom	James Cook University	Australia
Boese	Caroline	Victoria University of Wellington	NZ
Boullier●	Anne-Marie	University of Grenoble	France
Boulton	Carolyn	University of Canterbury	NZ
Braun●	Jean	Université de Rennes	France
Buske●	Stefan	Freie Universitaet Berlin	Germany
Caldwell	Grant	GNS Science	NZ
Callan	John	GNS Science	NZ
Cooper	Alan	University of Otago	NZ
Cox●	Simon	GNS Science	NZ
Davies	Tim	University of Canterbury	NZ
Dempsey	Eddie	University of Liverpool	UK
Doan	Mai Linh	Université Joseph Fourier Grenoble	France
Easterbook-Clarke	Luke	University of Otago	NZ
Eccles	Jennifer	University of Auckland	NZ
Ellis●	Susan	GNS Science	NZ
Ellsworth●	Bill	US Geological Survey	US
Erzinger●	Joerg	GFZ Potsdam	Germany
Furlong	Kevin	Penn State	US
Gessner	Klaus	University of Western Australia	Australia
Gledhill●	Ken	GNS Science	NZ
Harms●	Ulrich	ICDP Operational Support Group	Germany
Hasting	Mike	University of Auckland	NZ
Hayes	Karen	GNS Science	NZ
Hickman●	Steve	US Geological Survey	US
Howarth	Jamie	University of Otago	NZ
Langridge	Rob	GNS Science	NZ
Little●	Tim	Victoria University of Wellington	NZ
Mahan	Kevin	University of Colorado-Boulder	US
Malahoff	Alex	GNS Science	NZ
Malin●	Peter	University of Auckland	NZ
Manga●	Michael	UC Berkeley	US
Manuel	Chris	Westland High School	NZ
Mencin	David	UNAVCO/Plate Boundary Observatory	US
Menzies	Catriona	University of Southampton	UK
Norris●	Richard	University of Otago	NZ
Prior●	Dave	University of Liverpool	UK
Pyne	Alex	Victoria University of Wellington	NZ
Quigley	Mark	University of Canterbury	NZ
Regenauer-Lieb●	Klaus	University of Western Australia	Australia
Saffer●	Demian	Penn State	US
Savage	Martha	Victoria University of Wellington	NZ
Schmitt	Doug	University of Alberta	Canada

Deep Fault Drilling Programme (DFDP) — Alpine Fault, New Zealand

Surname (● denotes speaker or discussion rapporteur)	First name	Institution	Country
Sibson●	Rick	University of Otago	NZ
Stern●	Tim	Victoria University of Wellington	NZ
Sutherland●	Rupert	GNS Science	NZ
Teagle●	Damon	University of Southampton	UK
Thurber●	Cliff	Wisconsin	US
Tobin●	Harold	University of Wisconsin	US
Tomkins	Andy	Monash University	Australia
Townend●	John	Victoria University of Wellington	NZ
Toy	Virginia	University of Otago	NZ
Upton●	Phaedra	GNS Science	NZ
van der Pluijm●	Ben	University of Michigan	US
Wannamaker●	Phil	University of Utah	US
Whitcomb	Jim	National Science Foundation	US
Wöhrl●	Thomas	ICDP Operational Support Group	Germany
Zoback●	Mark	Stanford University	US