

Contents

Preface	vii
Acknowledgements	ix

Analogue and numerical sandbox models

SCHREURS, G., BUITER, S. J. H., BOUTELIER, D., CORTI, G., COSTA, E., CRUDEN, A. R., DANIEL, J.-M., HOTH, S., KOYI, H. A., KUKOWSKI, N., LOHRMANN, J., RAVAGLIA, A., SCHLISCHE, R. W., WITHJACK, M. O., YAMADA, Y., CAVOZZI, C., DELVENTISETTE, C., ELDER BRADY, J. A., HOFFMANN-ROTHER, A., MENGUS, J.-M., MONTANARI, D. & NILFOROUSHAN, F. Analogue benchmarks of shortening and extension experiments	1
BUITER, S. J. H., BABEYKO, A. YU., ELLIS, S., GERYA, T. V., KAUS, B. J. P., KELLNER, A., SCHREURS, G. & YAMADA, Y. The numerical sandbox: comparison of model results for a shortening and an extension experiment	29

Models of orogenic processes

CORTI, G., LUCIA, S., BONINI, M., SANI, F. & MAZZARINI, F. Interaction between normal faults and pre-existing thrust systems in analogue models	65
CRUDEN, A. R., NASSERI, M. H. B. & PYSKLYWEC, R. Surface topography and internal strain variation in wide hot orogens from three-dimensional analogue and two-dimensional numerical vice models	79
HAMPEL, A. & PFIFFNER, A. Relative importance of trenchward upper plate motion and friction along the plate interface for the topographic evolution of subduction-related mountain belts	105
KOYI, H. A. & SANS, M. Deformation transfer in viscous detachments: comparison of sandbox models to the South Pyrenean Triangle Zone	117
MERTEN, S., SMIT, W. G., NIEUWLAND, D. A. & RONDEEL, H. E. Analogue modelling of a reactivated, basement controlled strike-slip zone, Sierra de Albarracín, Spain: application of sandbox modelling to polyphase deformation	135
REY, P. F. & HOUSEMAN, G. Lithospheric scale gravitational flow: the impact of body forces on orogenic processes from Archaean to Phanerozoic	153
YAMADA, Y., BABA, K. & MATSUOKA, T. Analogue and numerical modelling of accretionary prisms with a décollement in sediments	169

Models of sedimentary basins

- CLARKE, S. M., BURLEY, S. D., WILLIAMS, G. D., RICHARDS, A. J., MEREDITH, D. J. & EGAN, S. S. Integrated four-dimensional modelling of sedimentary basin architecture and hydrocarbon migration 185
- MATTIONI, L., LE POURHET, L. & MORETTI, I. Rifting through a heterogeneous crust: insights from analogue models and application to the Gulf of Corinth 213
- LE POURHET, L., MATTIONI, L. & MORETTI, I. 3D modelling of rifting through a pre-existing stack of nappes in the Gulf of Corinth (Greece): a mixed analogue/numerical approach 233
- PANIEN, M., BUTER, S. J. H., SCHREURS, G. & PFIFFNER, O. A. Inversion of a symmetric basin: insights from a comparison between analogue and numerical experiments 253
- SANDIFORD, M., HANSEN, D. L. & MCLAREN, S. N. Lower crustal rheological expression in inverted basins 271
- WITHJACK, M. O. & SCHLICHE, R. W. Geometric and experimental models of extensional fault-bend folds 285

Models of surface processes and deformation

- BRAUN, J. Recent advances and current problems in modelling surface processes and their interaction with crustal deformation 307
- BONNET, S. & CRAVE, A. Macroscale dynamics of experimental landscapes 327
- GODARD, V., LAVÉ, J. & CATTIN, R. Numerical modelling of erosion processes in the Himalayas of Nepal: effects of spatial variations of rock strength and precipitation 341

Models of faults and fluid flow

- BJØRLYKKE, K. Effects of compaction processes on stresses, faults, and fluid flow in sedimentary basins: examples from the Norwegian margin 359
- EXNER, U., GRASEMANN, B. & MANCKTELOW, N. S. Multiple faults in ductile simple shear: analogue models of flanking structure systems 381
- MULLER, J. R., AYDIN, A. & WRIGHT, T. J. Using an elastic dislocation model to investigate static Coulomb stress change scenarios for earthquake ruptures in the eastern Marmara Sea region, Turkey 397
- NEMČOK, M. & HENK, A. Oil reservoirs in foreland basins charged by thrustbelt source rocks: insights from numerical stress modelling and geometric balancing in the West Carpathians 415
- PROVOST, A.-S. & CHÉRY, J. Relation between effective friction and fault slip rate across the Northern San Andreas fault system 429

- Index 437