

GEOLOGICAL SOCIETY SPECIAL PUBLICATION NO. 332

**Advances in Interpretation of Geological Processes:
Refinement of Multi-scale Data and Integration in
Numerical Modelling**

EDITED BY

M. I. SPALLA

Universita di Milano, Italy

A. M. MAROTTA

Universita di Milano, Italy

and

G. GOSSO

Universita di Milano, Italy

2010

Published by

The Geological Society

London

Contents

Preface	vii
VILLA, I. M. Disequilibrium textures versus equilibrium modelling: geochronology at the crossroads	1
FORSTER, M. A. & LISTER, G. S. Argon enters the retentive zone: reassessment of diffusion parameters for K-feldspar in the South Cyclades Shear Zone, Ios, Greece	17
MAMTANI, M. A. & GREILING, R. O. Serrated quartz grain boundaries, temperature and strain rate: testing fractal techniques in a syntectonic granite	35
CIRRINCIONE, R., FAZIO, E., HEILBRONNER, R., KERN, H., MENGELE, K., ORTOLANO, G., PEZZINO, A. & PUNTURO, R. Microstructure and elastic anisotropy of naturally deformed leucogneiss from a shear zone in Montalto (southern Calabria, Italy)	49
WATANABE, T. Geometry of intercrystalline brine in plastically deforming halite rocks: inference from electrical resistivity	69
ZUCALI, M., BARBERINI, V., CHATEIGNER, D., OULADDIAF, B. & LUTTEROTTI, L. Brittle <i>plus</i> plastic deformation of gypsum aggregates experimentally deformed in torsion to high strains: quantitative microstructural and textural analysis from optical and diffraction data	79
BAUMANN, C., GERYA, T. V. & CONNOLLY, J. A. D. Numerical modelling of spontaneous slab breakoff dynamics during continental collision	99
GARDI, A., BAIZE, S. & SCOTTI, O. Present-day vertical isostatic readjustment of the Western Alps revealed by numerical modelling and geodetic and seismotectonic data	115
SPLENDORE, R., MAROTTA, A. M., BARZAGHI, R., BORGHI, A. & CANNIZZARO, L. Block model versus thermomechanical model: new insights on the present-day regional deformation in the surroundings of the Calabrian Arc	129
MEDA, M., MAROTTA, A. M. & SPALLA, M. I. The role of mantle hydration in continental crust recycling in the wedge region	149
SALVI, F., SPALLA, M. I., ZUCALI, M. & GOSSO, G. Three-dimensional evaluation of fabric evolution and metamorphic reaction progress in polycyclic and polymetamorphic terrains: a case from the Central Italian Alps	173
HOBBS, B. E., ORD, A., SPALLA, M. I., GOSSO, G. & ZUCALI, M. The interaction of deformation and metamorphic reactions	189
Index	225