

Contents

Preface	vii
LISKER, F., VENTURA, B. & GLASMACHER, U. A. Apatite thermochronology in modern geology	1
Part I: New approaches in thermochronology	
GLEADOW, A. J. W., GLEADOW, S. J., BELTON, D. X., KOHN, B. P., KROCHMAL, M. S. & BROWN, R. W. Coincidence mapping – a key strategy for the automatic counting of fission tracks in natural minerals	25
HASEBE, N., CARTER, A., HURFORD, A. J. & ARAI, S. The effect of chemical etching on LA-ICP-MS analysis in determining uranium concentration for fission-track chronometry	37
DOBSON, K. J., PERSANO, C. & STUART, F. M. Quantitative constraints on mid- to shallow-crustal processes using the zircon (U–Th)/He thermochronometer	47
CARTER, A. & FOSTER, G. L. Improving constraints on apatite provenance: Nd measurement on fission-track-dated grains	57
MURRELL, G. R., SOBEL, E. R., CARRAPA, B. & ANDRIESEN, P. Calibration and comparison of etching techniques for apatite fission-track thermochronology	73
TIMAR-GENG, Z., HENK, A. & WETZEL, A. Convective heat transfer in a steeply dipping fault zone and its impact on the interpretation of fission-track data – a modelling study	87
WANG, W. & ZHOU, Z. Reconstruction of palaeotopography from low-temperature thermochronological data	99
Part II: Applied thermochronology – long-term evolution studies	
GLOTZBACH, C., SPIEGEL, C., REINECKER, J., RAHN, M. & FRISCH, W. What perturbs isotherms? An assessment using fission-track thermochronology and thermal modelling along the Gotthard transect, Central Alps	111
DUNKL, I., FRISCH, W., KUHLEMANN, J. & BRÜGEL, A. Pebble population dating as an additional tool for provenance studies – examples from the Eastern Alps	125
MALUSÀ, M. G., ZATTIN, M., ANDÒ, S., GARZANTI, E. & VEZZOLI, G. Focused erosion in the Alps constrained by fission-track ages on detrital apatites	141
DEL RÍO, P., BARBERO, L. & STUART, F. M. Exhumation of the Sierra de Cameros (Iberian Range, Spain): constraints from low-temperature thermochronology	153
XU, C., MANSY, J. L., VAN DEN HAUTE, P., GUILLOT, F., ZHOU, Z., CHEN, J. & DE GRAVE, J. Late- and post-Variscan evolution of the Ardennes in France and Belgium: constraints from apatite fission-track data	167
VENTURA, B., LISKER, F. & KOPP, J. Thermal and denudation history of the Lusatian Block (NE Bohemian Massif, Germany) as indicated by apatite fission-track data	181
KOHN, B. P., LORENCÁK, M., GLEADOW, A. J. W., KOHLMANN, F., RAZA, A., OSADETZ, K. G. & SORJONEN-WARD, P. A reappraisal of low-temperature thermochronology of the eastern Fennoscandia Shield and radiation-enhanced apatite fission-track annealing	193
KUHLEMANN, J., KRUMREI, I., DANIŠÍK, M. & VAN DER BORG, K. Weathering of granite and granitic regolith in Corsica: short-term ¹⁰ Be versus long-term thermochronological constraints	217
DE GRAVE, J., BUSLOV, M. M., VAN DEN HAUTE, P., METCALF, J., DEHANDSCHUTTER, B. & MCWILLIAMS, M. O. Multi-method chronometry of the Teletskoye graben and its basement, Siberian Altai Mountains: new insights on its thermo-tectonic evolution	237

DASZINNIES, M. C., JACOBS, J., WARTH, J.-A. & GRANTHAM, G. H. Post Pan-African thermo-tectonic evolution of the north Mozambican basement and its implication for the Gondwana rifting. Inferences from $^{40}\text{Ar}/^{39}\text{Ar}$ hornblende, biotite and titanite fission-track dating	261
KOUNOV, A., VIOLA, G., DE WIT, M. & ANDREOLI, M. A. G. Denudation along the Atlantic passive margin: new insights from apatite fission-track analysis on the western coast of South Africa	287
RUIZ, G. M. H., CARLOTTO, V., VAN HEININGEN, P. V. & ANDRIESSEN, P. A. M. Steady-state exhumation pattern in the Central Andes – SE Peru	307
EMMEL, B., JACOBS, J. & DASZINNIES, M. C. Combined titanite and apatite fission-track data from Gjelsvikfjella, East Antarctica – another piece of a concealed intracontinental Permo-Triassic Gondwana rift basin?	317
YAMADA, R., ONGIRAD, H., MATSUDA, T., OMURA, K., TAKEUCHI, A. & IWANO, H. Fission-track analysis of the Atotsugawa Fault (Hida Metamorphic Belt, central Japan): fault-related thermal anomaly and activation history	331
Index	339