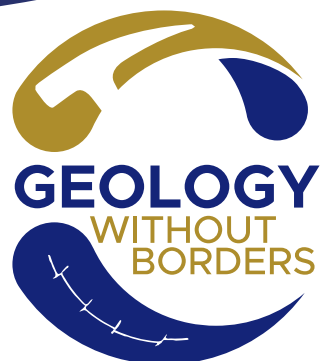




Trieste 14-16 settembre 2021

ABSTRACT BOOK

a cura della Società Geologica Italiana



90° Congresso della Società Geologica Italiana



PRESIDENTS OF THE CONGRESS

Angelo Camerlenghi e Francesco Princivalle

SCIENTIFIC COMMITTEE

Miloš Bavec, Lorenzo Bonini, Marco Brandano, Martina Busetti, Domenico Calcaterra, Alessandro Caporali, Chiara D'Ambrogi, Daniela Di Bucci, Agata di Stefano, Elisabetta Erba, Guido Giordano, Michele Marroni, Silvana Martin, Maurizio Mazzuchelli, Carmelo Monaco, Alberto Montanari, Gian Andrea Pini, Claudia Piromallo, Alina Polonia, Giovanni Pratesi, Luisa Sabato, Mauro Soldati.

ORGANISING COMMITTEE

Erika Barison, Lorenzo Bonini, Martina Busetti, Andrea Caburlotto, Bernardo Carmina, Dario Civile, Florence Colleoni, Carlo Corradini, Federico Da Col, Michela Dal Cin, Laura De Santis, Federica Donda, Paolo Giurco, Giulia Innamorati, Renata Giulia Lucchi, Fabio Massimo Petti, Francesca Petrera, Giorgia Pinna, Michele Rebesco, Umberta Tinivella, Luca Zini, Alessandro Zuccari.

ABSTRACT BOOK EDITORS

Bernardo Carmina, Giulia Innamorati, Fabio Massimo Petti, Alessandro Zuccari.

COVER IMAGE:

Miramare Castle in Trieste (Italy) with mountains in background (Photo 7915319 © Jackallxxx | [Dreamstime.com](https://www.dreamstime.com/)).

*Papers, data, figures, maps and any other material published are covered by the copyright own by the **Società Geologica Italiana**.*

DISCLAIMER: The Società Geologica Italiana, the Editors are not responsible for the ideas, opinions, and contents of the papers published; the authors of each paper are responsible for the ideas opinions and contents published.

La Società Geologica Italiana, i curatori scientifici non sono responsabili delle opinioni espresse e delle affermazioni pubblicate negli articoli: l'autore/i è/sono illi sololi responsabile/i.

PALEOSTRIPv1.0 - a user-friendly 3D backtracking software to reconstruct paleo-bathymetries

Colleoni F.*¹, De Santis L.¹, Pochini E.¹, Forlin E.¹, Geletti R.¹, Brancatelli G.¹, Tesauro M.²⁻³,
Busetti M.¹ & Braitenberg C.²

¹ National Institute for Oceanography and Applied Geophysics - OGS Trieste. ² University of Trieste, Department of Mathematics and Geoscience. ³ University of Utrecht, Department of Geosciences, the Netherlands.

Corresponding author e-mail: fcolleoni@inogs.it

Keywords: Backstripping, reconstructing paleo-bathymetries, basin analysis, numerical modeling, open-source code.

We present PALEOSTRIPv1.0, a MATLAB open-source software designed to perform 1D, 2D and 3D backtracking of paleo-bathymetries. PALEOSTRIP comes with a Graphical User Interface (GUI) to facilitate computation of sensitivity tests and to allow the users to switch on and off all the different processes and thus separate the various aspects of backtracking. As such, all physical parameters can be modified from the GUI. It includes 3D flexural isostasy, 1D thermal subsidence and possibilities to correct for prescribed sea level and dynamical topography changes. In the following we detail the physics embedded within PALEOSTRIP and we show a few applications on a drilling site (1D), a transect (2D) and a map (3D), taking the Ross Sea (Antarctica) as a case study. PALEOSTRIP has been designed to be modular and to allow users to insert their own implementations.