

Zeitschrift: Eclogae Geologicae Helvetiae
Herausgeber: Schweizerische Geologische Gesellschaft
Band: 85 (1992)
Heft: 3: Symposium on Swiss Molasse Basin

Artikel: Hydrodynamics of the Swiss Molasse Basin
Autor: Kiraly, L.
DOI: <https://doi.org/10.5169/seals-167052>

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. [Mehr erfahren](#)

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. [En savoir plus](#)

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. [Find out more](#)

Download PDF: 02.05.2026

ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>

Hydrodynamics of the Swiss Molasse basin

By L. KIRALY

Centre d'Hydrogéologie, University of Neuchâtel, 11 rue Emile-Argand, CH-2007 Neuchâtel

In deep sedimentary basins regional groundwater movement may be a very important factor for mass and energy transport. Interpretation of the chemical and isotopic composition of groundwater, understanding of the geothermal conditions (anomalies) and forecasting the possible effects of industrial waste disposals nearly always would require the knowledge of the regional, intermediate and local ground water flow systems.

The available data on the hydraulic parameters being very limited, they generally do not allow an observation-based reconstruction of the deep groundwater flow field. It is a fact, however, that lack of data has never stopped geoscientists from making more or less sound hypotheses on what they do not know. The only way to show the consequences of these hypotheses in a consistent theoretical framework is to use numerical groundwater flow and transport models. The results, even if considered only as qualitative ones, will show what the deep groundwater flow field could look like (see figures 4A and 4B which illustrate the sensibility of the flow field to permeability changes in a theoretical sedimentary basin). A few groundwater flow models of the Swiss and German Molasse Basins are presented and briefly discussed.

Requirements for waste disposal in the Molasse

By P. HUGGENBERGER

EAWAG, CH-8600 Dübendorf

Marls and clays of the Molasse have been selected for years as the bedrock or host rock for the disposal of non-radioactive waste. The problems concerning the quantities and qualities of waste and of hazardous waste disposal sites (including repositories in the Molasse sediments) influenced the legal requirements for waste disposal, which are outlined in the new technical regulations (TVA) of December 1990. These regulations will have a significant impact on future trends in waste disposal. Although the improved separation of wastes into specified categories and the optimum recycling or disposal of each class of waste is now mandatory, large volumes of waste from industrial and domestic activities will continue to require landfill facilities. The number of potential locations for waste disposal in Switzerland is declining and future site selection will not only be based on scientific criteria, but it will also be constrained by logistical, economic and political considerations. Some of the future sites are planned in the geologic formations of the Molasse.

Prediction of the long-term hydrogeological and geochemical behaviour of the system "Fill-Liner-Bedrock", in particular for waste disposal sites in the Upper- and Lower