

Quantitative Geomorphology (EH 605)

Introduction to Geomorphic processes.

Diffusion equation and its applications in modelling of geomorphic processes: Hillslope erosion processes, channel bed sediment transport process, groundwater dynamics. Numerical simulation of landforms through transport equations.

Advection equation and its applications in modelling of geomorphic processes: river response to tectonic process, knick point migration in river channel. Numerical simulation of processes through advection equations.

Stochastic processes in Geomorphology and its modelling. Graph Theory and its applications in modelling of geomorphic processes.

References:

Anderson, R.S. and Anderson, S.P., 2010. Geomorphology: The Mechanics and Chemistry of Landscapes. Cambridge University Press

Pelletier, J.D., 2008. Quantitative Modeling of Earth Surface Processes. Cambridge University Press

D Turcotte and G Schubert, 2014 Geodynamics, Third Edition, Cambridge Univ Press.