

KnickTools

version 0.2

User Guide

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Chapter 1

Introduction

1.1 Purpose

Geomorphic analysis increasingly leverages ever-improving remote-sensed datasets that provide excellent topographic resolution, anywhere in the world. With these data, we are able to model the hydrology of landscapes, e.g. where rivers form, their likely flow velocities and geometries, ultimately with a view to better understand how fluvial landscapes evolve toward equilibrium conditions or how they have responded to a change in external boundary condition i.e. tectonic perturbations.

With these challenges, we as geomorphologists need to develop better tools that enable us to examine landscapes in greater detail whilst working efficiently. The analysis of field data can be a cumbersome task when operating GIS software that requires a high degree of repetitive work and data management. In order to quickly retrieve scientific answers we could benefit with a rapid means to appraise landscapes and derive well-published comparable indices and tackle scientific rather than productivity problems.

1.2 MATLAB

MATLAB (Matrix Laboratory... I thought it was Maths Laboratory too) is a ubiquitous software package that provides an easy interface to an otherwise syntactically strange programming language. This aside, it is common to most all academic institutions as a piece of pre-installed software. It is powerful and effective in handling numerical datasets and developing cross-platform scientific graphical applications.

1.3 TopoToolbox

The basis of the Knicktools application is the TopoToolbox framework.

Chapter 2

Examples

2.1 Stream Objects

2.2 North Peloponnese

Chapter 3

Further reading

3.1

3.2 North Peloponnese

References