Earth Surface Process Modelling course

Introduction

Jean Braun 2020

Universität Potsdam
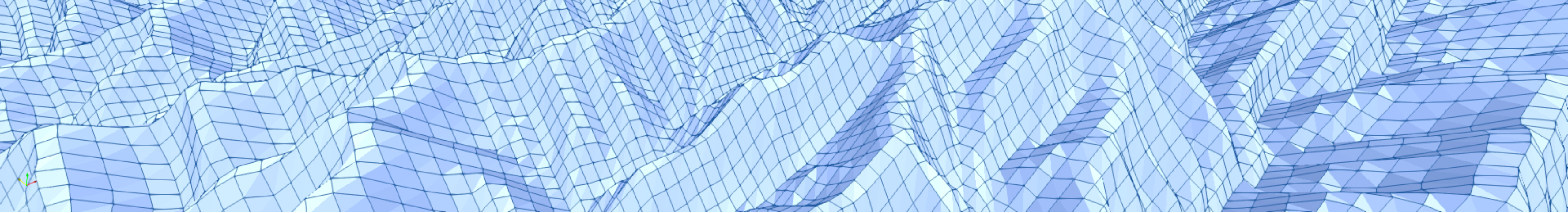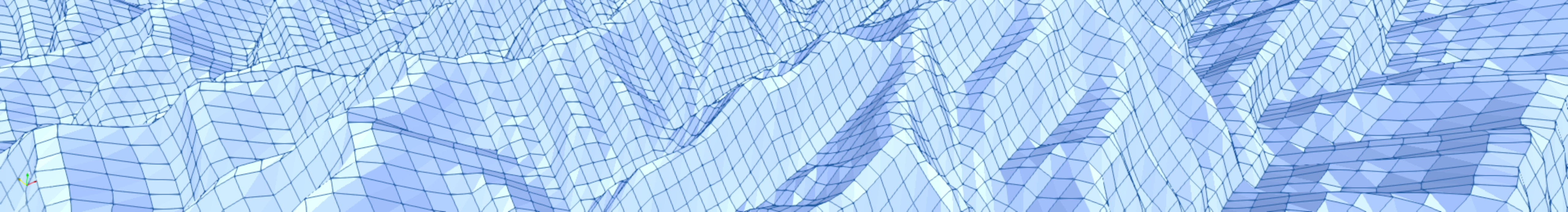
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Objectives

To develop the skills and knowledge to create a landscape evolution model, test it and use it to answer a well-posed geomorphological question

To develop skills in basic numerical methods

To develop knowledge about the derivation and use of partial differential equations in geomorphology

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Content

1. The Stream Power Law (SPL)

2. 1D SPL model and applications

3. The diffusion equation

4. 1D code development and applications to hill slope processes, hydrology and glacier dynamics

5. Development of 2D landscape evolution model (SPL-FastScape algorithm + Diffusion)

6. Use of the FastScape-lem to solve a generic problem in quantitative geomorphology
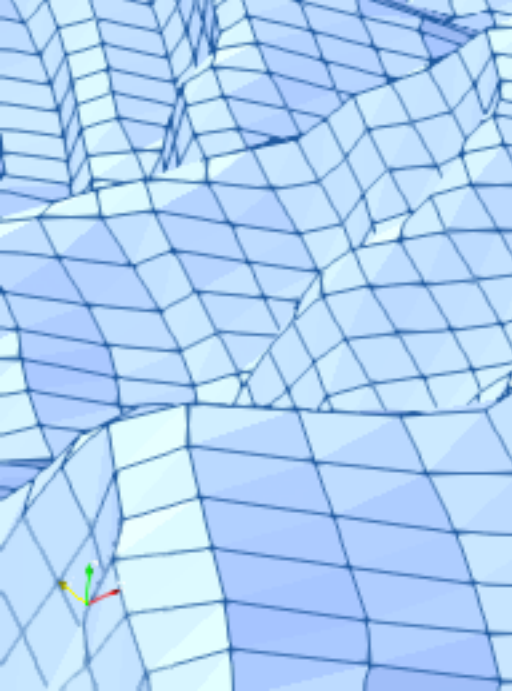
April 2022

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20 ▬16:15 Introduction	21 ▬08:30 Python	22	23	24
25	26	27 ▬16:15 SPL	28 ▬08:30 SPL	29	30	1

May 2022

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
25	26	27	28 ▬16:15 SPL	29 ▬08:30 SPL	30	1
2	3	4 ▬16:15 SPL	5 ▬08:30 SPL	6	7	8
9	10	11 ▬16:15 Diffusion	12	13	14	15
16	17	18 ▬16:15 Diffusion (R)	19 ▬08:30 Diffusion (R)	20	21	22
23	24	25	26	27	28	29
30	31	1 ▬16:15 Diffusion	2 ▬08:30 SPL 2D	3	4	5

June 2022

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
30	31	1 ▬16:15 Diffusion	2 ▬08:30 SPL 2D	3	4	5
6	7	8 ▬16:15 SPL 2D	9 ▬08:30 SPL 2D	10	11	12
13	14	15	16 ▬08:30 FastScape	17	18	19
20	21	22 ▬16:15 FastScape (R)	23 ▬08:30 FastScape (R)	24	25	26
27	28	29 ▬16:15 FastScape	30 ▬08:30 Project	1	2	3

July 2022

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
27	28	29	30 ▬16:15 FastScape	1 ▬08:30 Project	2	3
4	5	6 ▬16:15 Project	7 ▬08:30 Project	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28 ▬08:30 Project Dealine (R)	29	30	31