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# Propositions

Attached to the thesis

*From source to stream: measuring and modelling sediment shape evolution in mountain catchments*

by

Alessandro Cattapan

1. The accuracy of sediment shape estimates based on image analysis can be affected in similar amounts by the image segmentation method and by the computational geometry algorithm used.  
(this thesis, chapter 2)
2. Data suggests that the evolution of sediment circularity depends not only on their lithology and transport environment, but also on their initial shape. (this thesis, chapter 3)
3. The distribution of the shape of fragments produced by arenites and metabasalts outcrops is specific to each lithology.  
(this thesis, chapter 3)
4. The direct estimation of travel distance based on sediment shape has inherently high uncertainty due to natural variability in parent fragment shapes and the functional relationships describing the process. (this thesis, chapter 4)
5. Braided rivers act as chaotic transitions between single-thread river styles, analogous to hydraulic jumps that connect supercritical and subcritical flow conditions via intense turbulence. This analogy points to deeper underlying similarities that merit further investigation.

6. A supervisory team is like a blue suit: its importance cannot be overstated.
7. Those who say that data can speak for themselves have either experienced exceptional luck or possess limited familiarity with the complexity of real data.
8. As machines and IT systems take over an expanding range of human skills and tasks, society will be forced to reconsider what gives human beings their value.
9. In an environment that prioritizes guaranteed and immediately applicable outcomes, a proposal on curiosity-driven fundamental research would probably have struggled to obtain funding.
10. The presence of human flaws and conflicts of interest in academia reminds us that knowledge alone does not guarantee wisdom.

*These propositions are regarded as opposable and defensible, and have been approved as such by the promoters Prof.dr. M.E. McClain and Prof.dr. M.J. Franca and copromotor Dr. K. Katsanou*