Prix Schläfli

Geosciences 2024

Laudatio for the Award Ceremony of the **Prix Schläfli Geosciences 2024** of the Swiss Academy of Sciences (SCNAT) for **Dr Gilles Antoniazza**

The jury of the Prix Schläfli 2024 of SCNAT in Geosciences, consisting of Christine Pümpin (University of Basel), Dr Francesca Piccoli (University of Bern), Dr Moritz Gübler (University of Bern), Dr Ulrich Krieger (ETH Zürich) and Prof. Olivier Bachmann (ETH Zürich) has evaluated eight very high-quality applications and proposed to award the prize to Dr Antoniazza for his publication entitled 'Anatomy of an Alpine Bedload Transport Event: A Watershed-Scale Seismic-Network Perspective'. The board of the Platform Geosciences then unanimously endorsed the decision of the jury and awarded the Prix Schläfli 2024 in Geosciences to Dr Antoniazza.

Dr Antoniazza obtained his MSc degree in geomorphology in 2015 at the University of Lausanne and was awarded his PhD degree in environmental sciences from the same university in 2023 (advisors: Dr Lane and Dr Rickenmann). Since his PhD, Dr Antoniazza has been teaching at the University of Lausanne on environmental sciences, and co-founded the start-up company FluvialTech GmbH, which offers specialized services for monitoring and predicting channel morphology and sediment flows in rivers in order to reduce flood risk, optimize hydropower production and improve stream ecology.

The study submitted by Dr Antoniazza focuses on the characterisation of bedload transport, which remains a fundamental topic for our society, even after decades of research, including some significant advances by Hans Albert Einstein, the son of the Albert. What HA Einstein started developing almost a century ago is a physical theory for bedload transport prediction. The work of Dr Antoniazza focuses on testing this theory in Alpine rivers, with novel measurements using seismic sensors. Such measurements are fundamental to improve watershed management, not only in our country, but all over the world.

Following the events of the past summer in Switzerland, Dr Antoniazza's work appears extremely timely. As we have all heard, many Alpine rivers came out of their beds in late spring and early summer, generating lots of costly damage and distress to local communities. Hence, a better understanding of how erosion and sediment deposition processes work in rivers, and how to better predict bedload transport at the watershed scale in Alpine areas, appears more important than ever as extreme events may increase in the future due rapid climate changes.

The jury of the Prix Schläfli was particularly impressed by Dr Antoniazza's capacity to produce excellent scientific results and immediately translate them into a service to society through his start-up company helping to monitor rivers. We suspect that this past summer has been extremely busy for Dr Antoniazza, but it has also pointed out that the hard work he has done had an immediate and useful output. In terms of learning experience, it must have been fascinating in facing how to deal with extreme events.

We would like to congratulate Dr Antoniazza again on his very impressive work and wish him all the best of luck for the future.

On behalf of the president of the Prix Schläfli 2024 Jury, Prof. Olivier Bachmann.
Award Ceremony, November 2024

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