



**Laudatio for the Award Ceremony
of the Prix Schläfli Mathematics 2021
of the Swiss Academy of Sciences (SCNAT)
for Dr Gabriel Dill**

The Jury of the Prix Schläfli Mathematics 2021 of the Swiss Academy of Sciences (SCNAT), consisting of Professors Jérémy Blanc (University of Basel), Sara van de Geer (ETHZ), Marc Troyanov (EPFL), Norbert Hüngrerbühler (ETHZ), Thomas Studer (University of Bern) has evaluated many excellent applications, and decided unanimously to award the Prix Schläfli in Mathematics 2021 to Dr. Gabriel Dill for his exceptional thesis in diophantine geometry.

Gabriel Dill's PhD contains several remarkable contributions to a particularly ambitious problem: the conjecture on unlikely intersections. This is a sweeping generalisation of such landmark results in diophantine geometry as Faltings' theorem on the Mordell conjecture. His thesis is ambitious and broad in technique, requiring familiarity with the theory of abelian varieties but also o-minimal geometry from model theory. Gabriel Dill's results are surprisingly strong and the thesis contains many original ideas. For example, he needed precise information on the height when varying over a collection of diophantine objects. The height is the key to many insights in the field but is particularly difficult to handle in connection with the Mordell conjecture and its generalisations. In collaboration with Barroero, he completely solved the conjecture on unlikely intersections for any curve in any abelian variety. This is the capstone of more than a decade's worth of progress by several authors. Dill's thesis also contains the seeds for further research that he is pursuing now as a postdoc.

Gabriel Dill obtained his B.Sc. and M.Sc. in Mathematics at the University of Basel in 2013 and 2015, respectively. His grade average was 6.0 (best grade). He then did his Ph.D. thesis from 2016 to 2019, entitled "Unlikely intersections with isogeny orbits" under the supervision of Philipp Habegger, still in Basel, and graduated with the top grade (summa cum laude). Dill found the time to work as a student representative on committees and co-organised a research seminar for the graduate students at our department. Dill was awarded an Early Postdoc.Mobility fellowship from the Swiss National Science Foundation (SNSF), which supports this post-doctoral stay at the University of Oxford, where he is currently working under the mentorship of Prof. Dr. Jonathan Pila.

Prof. Dr Jérémy Blanc, president of the jury of the Prix Schläfli 2021 and of the Swiss Mathematical Society

Award Ceremony, Basel, 15 September 2021