

**Dr. Jacob Tsimerman, University of Toronto
2017 André-Aisenstadt Prize Recipient**

Montréal, June 20, 2017. - The International Scientific Advisory Committee of the Centre de recherches mathématiques (CRM) is pleased to announce that Jacob Tsimerman, of the University of Toronto, is the 2017 André Aisenstadt Prize recipient.

Just six years beyond his PhD, Jacob Tsimerman is an extraordinary mathematician whose work at the interface of transcendence theory, analytic number theory and arithmetic geometry is remarkable for its creativity and insight.

Jacob proved the existence of Abelian varieties defined over number fields that are not isogenous to the Jacobian of a curve. This had been conjectured by Katz and Oort and follows from the André-Oort conjecture. In joint work with several collaborators, Jacob established non-trivial bounds for the 2-torsion in the class groups of number fields. For quadratic fields, this can be done by genus theory but the general case was a complete mystery. With Bakker, Jacob has established geometric analogues of the Frey-Mazur uniform boundedness results for elliptic curves over function fields. Their approach has yielded powerful results with methods amenable to far more general applications.

Among Jacob's most notable accomplishments are his recent breakthroughs on the André-Oort conjecture. This conjecture about Shimura varieties, at the intersection of diophantine geometry and the arithmetic of automorphic forms, has been a central theme in Arithmetic Geometry for many years. Jacob already made important progress on it in his thesis, but in the last few years, working together with Pila, he created many of the technical tools for proving the case of the Siegel modular variety. There was still one piece that had to be completed on the size of Galois orbits. Jacob settled this final component in a brilliant short paper which showed that it follows from an average form of the Colmez conjecture. The latter has been proved by Andreatta, Goren, Howard and Madapusi-Perla, and independently by Yuan and Zhang, thus giving a complete unconditional proof of the André-Oort conjecture for this Shimura variety.

Besides being a brilliant and innovative researcher, Jacob is also an excellent expositor and teacher. Moreover, he has been active in Math Outreach through his work helping to train the Canadian team for the International Math Olympiad. He is currently the Chair of the Canadian IMO Committee.

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