Berlin Mathematical School

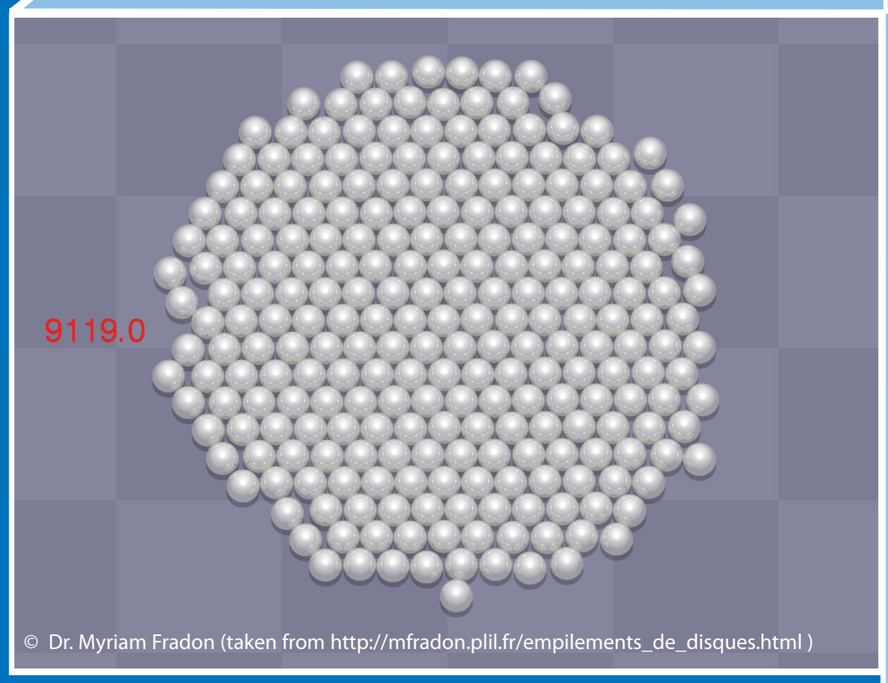
BMS Days 2018

Monday 19 February 2018

BMS Loft, Urania, An der Urania 17, 10787 Berlin

11:00 Sylvie Roelly (U Potsdam)

15:30 Timo de Wolff (TU Berlin)



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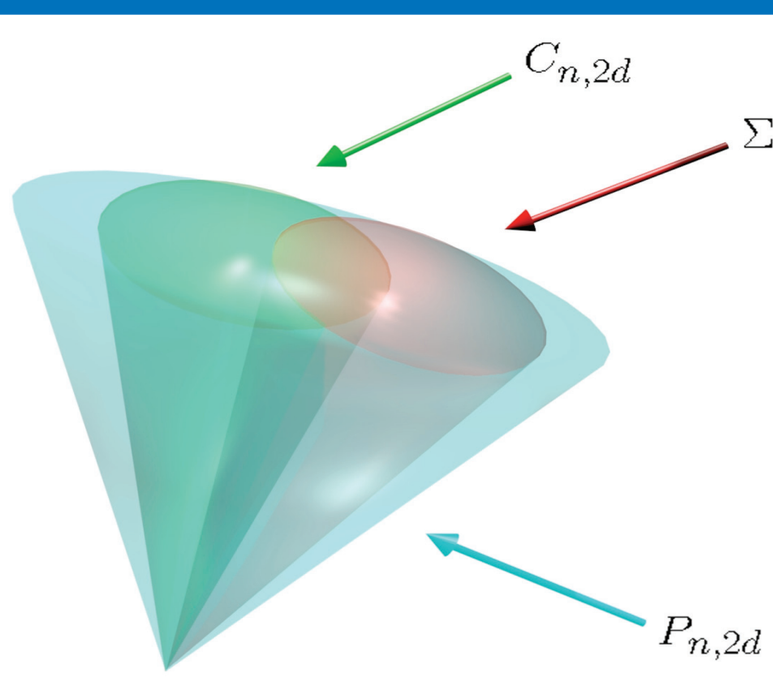
Sylvie Roelly: (Random) dynamical sphere packing

We consider finite (and infinite) systems of hard balls in Euclidean space, undergoing random dynamics and interacting via a mutual attraction force. Such evolutions, solutions of stochastic differential equations, converge asymptotically in time towards equilibrium states, which are connected with the famous geometry problem of close-packing of equal spheres.

Sylvie Roelly is the professor for probability theory at the University of Potsdam. Her areas of research include stochastic analysis, interacting particle systems and statistical mechanics.



© Timo de Wolff

Timo de Wolff: An introduction to nonnegativity and polynomial optimization

In science and engineering, we regularly face nonlinear polynomial optimization problems. Solving these problems is essentially equivalent to certifying nonnegativity of multivariate, real polynomials -- a key problem in real algebraic geometry since the 19th century.

In his talk, de Wolff will discuss how to tackle such problems both from the perspective of algebra and optimization.

Timo de Wolff is the head of the Emmy Noether Junior Research Group at the TU Berlin. His research is focused on real and computational algebraic geometry, and nonlinear optimization.

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