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GASTVORTRAG

Das Institut für Mathematik lädt zu folgendem Vortrag ein:

Luigi Amedeo Bianchi

Institut für Mathematik, Universität Augsburg

über

Pattern size in Gaussian fields from spinodal decomposition

Spinodal decomposition of the stochastic Cahn-Hilliard model describes phase separation for metal alloys and shows two-dimensional snake-like patterns. Such patterns appear also in other models, describing for example animal coats or vegetation patterns in desertification, due to an overlay of eigenfunction of the Laplacian with similar wave number.

Our main result studies random functions given by cosine Fourier series with independent Gaussian coefficients, that dominate the dynamics in the Cahn-Hilliard model. This is not a cosine process, as the sum is taken over domains in Fourier space that not only grow and scale with a parameter of order ν , but also move to infinity. Moreover, the model under consideration is neither stationary nor isotropic.

To study the pattern size of nodal domains we consider the density of zeros on any straight line through the spatial domain. Using a theorem by Edelman and Kostlan and weighted ergodic theorems that ensure the convergence of the moving sums, we show that the average distance of zeros is asymptotically of order ν with a precisely given constant. The talk is based on joint work with D. Blömker and P. Düren, currently available on arXiv.org

Zeit: **Donnerstag, den 19. November 2015 um 16.10 Uhr**

Ort: **Bauing.-Gebäude, Technikerstraße 13/7. OG, Seminarraum Mathematik**

Gäste sind herzlich willkommen!

Hermann Mena