The Worldwide Center of Mathematics

Stability conditions and Stokes factors

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Coffee, tea, cookies: 3:30pm
Talk: 4-5pm
929 Massachusetts Ave., Cambridge, Suite #102

Abstract: This talk will be concerned with stability conditions on an abelian category A, a notion introduced by T. Bridgeland which generalizes that of Mumford stability for vector bundles over a curve.

The space Stab(A) of all such conditions has the structure of a complex manifold and has attracted a lot of attention recently. D. Joyce defined invariants which count, in a suitable sense, semistable objects in A and showed how to organize these in a holomorphic generating function on Stab(A) which satisfies an intriguing non-linear PDE.

After reviewing his work, I will explain how the transformation rules of Joyce's invariants and his PDE can be understood as Stokes phenomena. The latter describe the change of asymptotics for solutions of ODE's on the complex plane around irregular singularities, that is poles of order greater or equal to 2.

This is joint work with Tom Bridgeland.

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All attendees will need to sign a release form, as the lecture will be recorded for distribution on the Web.