Oberseminar Dynamische Systeme
Rohil Prasad, Princeton, “Invariant probability measures from pseudoholomorphic curves”
Abstract: We introduce a new method for producing invariant probability measures for a large class of volume-preserving flows on closed, oriented odd-dimensional smooth manifolds; these include all non-singular volume-preserving flows in dimension three. These probability measures arise as “limit sets” of pseudoholomorphic curves with infinite Hofer energy. We will also discuss an application of our method to showing that the characteristic flow on a large class of autonomous Hamiltonian energy levels is not uniquely ergodic.

Interessenten melden sich bitte bei Corina Minzlaff (corina.minzlaff@rub.de) für die Zoom-Zugangsdaten.

Oberseminar Kombinatorik
Jesus de Loera, UC Davis, “Stochastic Tverberg-type theorems and their relevance in Machine Learning and Statistical Inference”
This talk will take place in person at the DIGO-Vortrag in Frankfurt and be streamed online (via Zoom).

Oberseminar Numerik
Abstract: In complex Ginzburg Landau equations many different wave phenomena occur. There are special solutions which maintain their shape while traveling in space and oscillating in the complex plane. One specific class of such solutions are traveling oscillating fronts (TOFs). Their profile decays at minus infinity but approaches a nonzero limit at plus infinity. In this talk we give results on the asymptotic stability of TOFs, where we allow the initial perturbation to be the sum of an exponentially localized part and a front-like part which approaches a small but nonzero limit at plus infinity. The underlying assumptions guarantee that the operator, obtained from linearizing about the TOF in a co-moving and co-rotating frame, has essential spectrum touching the imaginary axis in a quadratic fashion and that further isolated eigenvalues are bounded away from the imaginary axis. The basic idea of the proof is to consider the problem in an extended phase space which couples the wave
dynamics on the real line to the ODE dynamics at infinity. Using slowly decaying exponential weights, the framework allows to derive appropriate resolvent estimates, semi-group techniques, and Gronwall estimates.

Joint work with Wolf-Jürgen Beyn (Bielefeld University)