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**Integrability of infinitesimal Einstein  
deformations on Kähler manifolds and  
symmetric spaces**

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Raum 7.530**

Abstract: Infinitesimal Einstein deformations are solutions of the linearised Einstein equation. They can be considered as potential tangent vectors to curves of Einstein metrics. An important question is to decide for a given infinitesimal Einstein deformation whether it is integrable, i.e. indeed tangent to such a curve. In 1981 Koiso introduced an obstruction against integrability of infinitesimal Einstein deformations. However, so far the obstruction was computed only in very few cases. In my talk I will present a new formulation of Koiso's obstruction which makes it more accessible to calculations, in particular on Kähler manifolds and symmetric spaces. I will demonstrate this for Kähler-Einstein metrics of negative scalar curvature and the symmetric metric on the complex Grassmannians. For the Grassmannians it turns out that in half of the cases all infinitesimal Einstein deformations are obstructed, i.e. the metric is isolated in the space of Einstein metrics.

My talk is based on joint work with Paul-Andi Nagy and a follow-up project with Stuart Hall and Paul Schwahn.

