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### **How to measure deviation from the Kerr initial data – recent progress**

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In this talk I will present recent progress concerning a construction of a geometric invariant for initial data sets for the Einstein vacuum field equations. This geometric invariant vanishes if and only if the initial data set corresponds to data for the Kerr spacetime, and thus, it characterizes this type of data. This construction is based on Killing spinors and have now been carried out for compact domains and domains reaching the asymptotically flat ends. We investigate properties of this invariant.