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**UNIVERSITÄT
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STRUCTURES JOUR FIXE

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**“Measuring the symplectic size of
subsets in phase space”**

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ABSTRACT

One of the goals of Symplectic Geometry is to measure the size of subsets in phase space by associating to each subset a number, which we refer to as the symplectic capacity of the subset. The symplectic capacity has the natural property of being invariant under canonical transformations and monotone with respect to the inclusion of subsets. However, it captures a notion of size which can be very different from the standard volume and, therefore, quite counterintuitive. For example, a symplectic capacity would tell you that a ball of radius 2 is larger than a cylinder with 2-dimensional base of radius 1 and infinite height!

Understanding how much the symplectic capacity and the volume of a subset differ is one of the driving questions in Symplectic Geometry and led to some recent exciting developments in the field, which we will present during the talk along with some interesting open problems.

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