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## Oberseminar Dynamische Systeme

### Introducing sub-Riemannian Billiards

**Dienstag, 19. Januar 2021**  
**16:15 Uhr – per Zoom**

**Lucas Dahinden**  
**(Heidelberg)**

#### Abstract:

In sub-Riemannian geometry we study Riemannian manifolds with movement restricted to a bracket generating sub-bundle of the tangent bundle. We introduce a billiard reflection law in two natural ways: on the one hand by a variational principle and on the other hand by a symplectic description as characteristic flow lines at the boundary of a domain in the cotangent bundle. The two definitions coincide. Finally, we examine the highly symmetric example of the Heisenberg group, which reveals strong connections to magnetic billiards.

Guests are very welcome!