

Geometry, Groups and Dynamics/GEAR Seminar  
(held at the Illinois hub of GEAR )

**12:00 pm, Tuesday, April 18, 2017, 243 Altgeld Hall**

Edgar Bering (UIC Math)

Compatibility of length functions and the geometry of their deformation spaces

Abstract: Given two length functions  $l, m$  of minimal irreducible actions on  $\mathbf{R}$ -trees  $A, B$ , when is  $l+m$  again the length function of a minimal irreducible action on an  $\mathbf{R}$ -tree? We will show that additivity is characterized by the geometry of the Guirardel core of  $A$  and  $B$ , and also by a combinatorial compatibility condition generalizing the condition given by Behrstock, Bestvina, and Clay for  $F_n$  actions on simplicial trees. This compatibility condition allows us to characterize the PL-geometry of common deformation spaces of  $\mathbf{R}$ -trees, such as the closure of Culler-Vogtmann Outer Space or the space of small actions of a hyperbolic group  $G$ .

[Video](#)