

1135-47-1888

**Victor Vinnikov\*** ([vinnikov@math.bgu.ac.il](mailto:vinnikov@math.bgu.ac.il)), Department of Mathematics, Ben Gurion University of the Negev, Beer Sheva, Israel. *Noncommutative hyperbolic metrics*. Preliminary report.

We define a pseudometric on noncommutative domains that possesses a noncommutative Schwarz–Pick property: every noncommutative function is a contraction. The pseudometric is defined in purely geometric terms and can be calculated analytically for domains defined by a noncommutative hermitian kernel, in particular for “generalized balls” that appear naturally in the study of interpolation problems and that include all matrix convex sets. We show that under natural conditions (the noncommutative hyperbolic metric is nondegenerate and blows up as we approach the boundary), two noncommutative domains admit a noncommutative bijection iff they are isometric. This talk is based on a joint work (in progress) with Serban Belinschi. (Received September 25, 2017)