On dynamics of Lorenz maps - Renormalizations and invariant sets

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Lorenz maps are piecewise monotone interval maps with a single discontinuity. Such maps appear as Poincaré maps in geometric models of well known Lorenz attractor, but they also have important connections with number theory and fractal geometry. The main objects considered in this talk will be renormalizations of expanding Lorenz maps, i.e. certain return maps of an original Lorenz map to smaller intervals around the discontinuity. In 2011, Y. Ding in his paper *Renormalization and α-limit set for expanding Lorenz maps* claimed that there is a one-to-one correspondence between the renormalizations and proper completely invariant closed sets of expanding Lorenz map. However, it turns out that this result is not true in general. In this talk I will construct a proper counterexample and present our attempt to correct Ding's statement.
(joint work with Piotr Oprocha)