

# AN IMPROPER POISSON LINE PROCESS IS A SIRS

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Aldous has introduced a notion of scale-invariant random spatial network (SIRS) as a mathematical abstraction of road networks. Intuitively, those are random processes that assign a route between each pair of points in Euclidean space, while being invariant under rotation, translation, and change of scale, and such that the routes are not too long and mainly lie on “main roads”. The only known example was somewhat artificial. The Poisson line process studied by Kendall has been suggested as a more natural candidate. We prove that the network of geodesics of that random metric space is indeed a SIRS in any dimension.