Bi-invariant metrics on the group of contact transformations

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Contact manifolds, i.e. odd-dimensional smooth manifolds endowed with a maximally non-integrable field of hyperplanes, are intimately related to symplectic manifolds. Although in symplectic topology a famous bi-invariant metric, the Hofer metric, has been studied since more than 20 years ago, it is only recently that some somehow analogous bi-invariant metrics have been discovered on the group of diffeomorphism that preserve a contact structure. In my talk I will review these constructions and discuss how they are related to some other rigidity phenomena in contact topology that have been discovered in the last few years, in particular the notion of orderability (due to Eliashberg and Polterovich) and an analogue in contact topology (due to Eliashberg, Kim and Polterovich) of Gromov's famous non-squeezing theorem.