1135-57-2942 **Steve Boyer** and **Ying Hu*** (ying.hu@cirget.ca). *Left-orderable 3-manifold groups, taut foliations and contact structures.*

Let M be an irreducible $\mathbb{Q}$-homology sphere (i.e. $H_*(M, \mathbb{Q}) \cong H_*(S^3, \mathbb{Q})$). The L-space conjecture suggests the following statements are equivalent: a) $\pi_1(M)$ is left-orderable; b) M admits a co-orientable taut foliation; c) M is not a Heegaard Floer L-space. The implication from b) to c) was established by utilizing the contact structure that is close to a given taut foliation.

In this talk, we discuss how contact structures could also play a role in studying the interconnection between the left-orderability of $\pi_1(M)$ and the existence of co-orientable taut foliations on M. Following this idea, we confirm the L-space conjecture for cyclic branched covers of families of hyperbolic knots.

An important concept occurs in our argument, called fractional Dehn twist coefficient, which is also related to the Khovanov homology of knots.

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