Speaker: **Lackenby, Marc**
Title: *Heegaard splittings, the virtually Haken conjecture and Property tau*
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Abstract: I will outline the interaction of three seemingly disparate topics: Heegaard splittings, the virtually Haken conjecture and Property tau. The latter is concept due to Lubotzky and Zimmer, that is defined in terms of eigenvalues of the Laplacian, graph theory or representation theory, and is related to Property T. I will formulate a conjecture about Heegaard splittings, and will show how this and a conjecture of Lubotzky and Sarnak about Property tau implies the virtually Haken conjecture for hyperbolic 3-manifolds. I will also show that the positive virtual b_1 conjecture has equivalent formulations in terms of Heegaard splittings, and in terms of the behavior of the Laplacian.