IBRAHIM ASSEM, Université de Sherbrooke
On the first Hochschild cohomology group of a cluster-tilted algebra

This is a joint work with Ralf Schiffler and Maria Julia Redondo. Given a cluster-tilted k-algebra B, we study its first Hochschild cohomology group $HH^1(B)$ with coefficients in the B-B bimodule B. If C is a tilted algebra such that B is the relation-extension of C, then we show that if C is constrained, or else if B is tame, then $HH^1(B)$ is isomorphic, as a k-vector space, to the direct sum of $HH^1(C)$ with $k^{n_{B,C}}$ where $n_{B,C}$ is an invariant linking the bound quivers of B and C. In the representation-finite case, $HH^1(B)$ can be read just by looking at the quiver of B.