

# Séminaire de mathématiques et leurs applications

3 octobre 2019

**Pierre Patie**  
Cornell University

**Title:** Completely monotone intertwining relations

**Abstract:** In this talk, we introduce the concept of completely monotone intertwining relations as a strengthening of usual intertwining relations between Markov semi-groups. We proceed by providing some interesting applications of this new idea which includes the characterization of ergodic constants and hypercontractivity estimates for non-self-adjoint semigroups. We illustrate these results by presenting several examples that have emerged from the recent literature: discrete-to-continuous interacting particle models, degenerate hypoelliptic Ornstein-Uhlenbeck processes, and diffusion-to-jump Jacobi processes. This talk is based on a joint work with L. Miclo (IMT Toulouse).