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**Igor Belykh\*** (ibelykh@gsu.edu), P.O. Box 4110, Atlanta, GA 30302. *Computational models of pedestrian-bridge interactions: a new mechanism for emergent instability.*

In this talk, I will discuss complex dynamics of pedestrian-bridge interactions that can be quantified through a computation formula that predicts whether a pedestrian excites or stabilizes bridge motion. I will discuss the fundamental mechanism behind pedestrian-induced lateral instability of bridges due to some positive feedback from uncorrelated walkers whose foot forces do not cancel each other but create a bias. This work is joint with Mateusz Bocian, Alan Champneys, Kevin Daley, Russell Jeter, John Macdonald, and Allan McRobie. (Received January 19, 2021)