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Hai-Dang Nguyen* (dangnh.maths@gmail.com), 1925 8TH AVE, Apt 6H. *Stability and Stabilization of Coupled Jump Diffusions and Applications.*

This work develops stability and stabilization results for systems of fully coupled jump diffusions. Such systems frequently arise in numerous applications where each subsystem (component) is operated under the influence of other subsystems (components). We derive sufficient conditions under which the underlying coupled jump diffusion is stable. The results are then applied to investigate the stability of linearizable jump diffusions, fast-slow coupled jump diffusions. Moreover, weak stabilization of interacting systems and consensus of leader-following systems are examined. (Received September 21, 2021)