MINH BUI, University of British Columbia, Kelowna
Projecting onto the intersection of a cone and a sphere

The projection onto the intersection of (not necessarily convex) sets generally does not allow for a closed form even when the individual projectors have explicit descriptions. In this talk, we discuss the projection onto the intersection of a cone with either a ball or a sphere. Several cases, where an explicit formula for the projector is available, are provided. Various examples based on finitely generated cones, the Lorentz cone (also known as the ice cream cone), and the cone of positive semidefinite matrices are presented. The usefulness of our formulas is illustrated by numerical experiments for determining copositivity of real symmetric matrices. This talk is based on joint work with Heinz Bauschke and Xianfu Wang.