
WALAA MOUSI, University of Waterloo

How to project onto the intersection of a closed affine subspace and a hyperplane

Let A be a closed affine subspace and let B be a hyperplane in a Hilbert space. Suppose we are given their associated nearest point mappings. We present a formula for the projection onto their intersection. As a special case, we derive a formula for the projection onto the intersection of two hyperplanes. These formulas provide useful information even if the intersection is empty. Examples and numerical experiments are also provided.