1057-74-340   **Scott Godefroy*** (`scott.godefroy@gmail.com`), 5809 Dale Dr., Sykesville, MD 21784. *A Mean for Orientation Imaging Microscopy of Cubic Polycrystals.*

In analyzing an orientation map obtained from a polycrystal, the notion of a mean orientation is complicated by the presence of crystal symmetry. We consider a Riemannian manifold suited to polycrystals of cubic symmetry and obtain a notion of mean orientation in terms of the natural metric for orientations, the so-called disorientation. We will also consider the use of this mean in estimating crystallographic texture from an orientation map. (Received January 25, 2010)