

Diffusion Tensor Imaging (DTI) describes the anisotropic diffusion of water molecules within organized or semi-organized biological tissues to provide information about intravoxel microdynamics and orientation of microstructures that is comparable to histological preparations. Visualization of this information is a challenging problem and is an area of active research. Studies in the literature proposed various scalar anisotropy indices (such as Trace, volume ratio, fractional anisotropy relative anisotropy and other of linear, planar, and spherical measures), as a way of reducing the multivariate Diffusion Tensor (DT) data, to straightforwardly display one index value per pixel as an image. However, this approach provides only partial information about the measured diffusion properties. Recently, Mohr diagram was introduced to graphically represent the complete information contained in a DT. However, how the existing scalar anisotropy indices are related to the quantities on the Mohr diagram is yet to be explored. In this paper, we demonstrate the nature of these relationships and show how to obtain quantitative information necessary to calculate these anisotropy indices from the quantities on the Mohr diagram.