

1096-49-1596

Yunho Kim* (yunho.kim@yale.edu), 300 Cedar Street, TAC, N309, New Haven, CT 06520, and
Hemant Tagare. *Intensity Non-uniformity Correction Method in MR Imaging.*

We propose a variational method to correct the intensity non-uniformity artifact in the brain MR imaging. Intensity non-uniformity artifact appears in MR imaging due to various reasons such as RF coil inhomogeneity, interactions within the body, etc., which is more prevalent when multiple coils are in use. The underlying structure represented by a piecewise constant function is corrupted by multiplication of a slowly varying function, which results in a piecewise continuous function. Unknown underlying regions, unknown true data values, and noise are what makes it difficult to compensate for the non-uniformity artifact. Under some reasonable conditions, we can prove that a constant multiple of the slowly varying function can be found exactly in a carefully designed set of functions without noise. The minimization problem that we propose extends to the case when noise is present. We will discuss the formulation of the problem and its performances in this talk. As far as we know, no variational approach has been proposed for the problem. (Received September 16, 2013)