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**Morphology of cosmological fields during
reionization**

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Neutral hydrogen is the dominant component of the universe after recombination with high density regions harbouring the first luminous objects. The radiation from these first luminous objects changes the thermal and ionization state of the intergalactic medium leading to a major transition in the history of the universe called the Epoch of Reionization (EoR). The growth and topology of the ionized regions depends upon the properties of these first luminous sources. One important observational probe of the EoR is the 21cm spin flip hyperfine transition of the neutral hydrogen. The brightness temperature of this transition encodes the ionization and heating history of the IGM. We introduce real space morphological descriptors, called Minkowski Tensors (MTs) and topological quantities Betti numbers, to probe the morphology of the 21cm brightness temperature field. We show that the ionization history of the IGM can be reconstructed using the morphological description of brightness temperature in real space and help us further probe the properties of the first luminous objects.