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Magnetic Helicity and Flux Tube Dynamics in the Solar Convection Zone DIBYENDU NANDY, RICHARD CANFIELD, Montana State University — Magnetic helicity, a conserved topological parameter in ideal MHD systems – conditions close to which are realized in the solar plasma, is intimately connected to the creation and subsequent dynamics of magnetic flux tubes in the solar interior. It can therefore be used as a tool to probe such dynamics. Here we discuss how observations of magnetic helicity, manifested as the twist and writhe of solar active regions, can constrain the dynamics of flux tubes through the solar convection zone.

Dibyendu Nandi
Montana State University

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