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# Solar and Astrophysical Dynamos and Magnetic Activity

Global magnetic fields in planets, in the Sun and other stars, in spiral galaxies and galaxy clusters are believed to be generated and maintained by a hydromagnetic dynamo, a process that converts turbulent kinetic energy into magnetic energy. These dynamo processes operate on drastically different scales, but are associated with common physical mechanisms, involving a complex interaction of rotation, turbulence, and instabilities. The goal of IAU Symposium 294 was to discuss the most important results of recent studies of the cosmic dynamo processes, from planets to stars, galaxies, and clusters of galaxies. This volume covers advances in dynamo theories and numerical simulations, links between dynamos and turbulence, the origin of magnetic fields, and current and future observational projects. The proceedings of IAU S294 are an important asset for advanced students and researchers, as a summary of the hot topics related to the solar and astrophysical dynamos and magnetic activity.

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