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Probing the Shapes of Thermonuclear Explosions through Early to Late-Time Polarimetry

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Thanks to the rapid detections of supernovae by modern high-cadence wide-field transient surveys, the geometry properties of supernovae can be probed at unprecedented phases early as the first few days after the explosion. The geometry through the outer to inner layers can be inferred observationally through tomographic dissection, for example, with time-resolved spectropolarimetry that is sensitive to three-dimensional geometrical and chemical structures. I will provide a brief overview of the lessons we learned from the polarimetric observations of thermonuclear supernovae, as well as the main challenges and potential future efforts that need to be considered to better understand thermonuclear explosions.

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Session Classification: Polarization and supernovae, novae and kilonovae