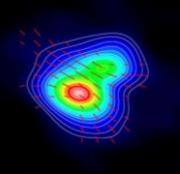


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Project Aims

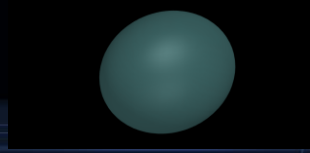
- Create an algorithm/program to simulate observations
 - Superpositions of common morphologies
 - Plots of major Stokes parameters (I,Q,U)
- Customizable object and observing parameters
 - Object parameters:
 - Cloud geometry and density
 - Magnetic field and intensity
 - Polarization function
 - Sightline parameters:
 - Field-of-view and offset from protoplanetary cloud



Girart, Rao, and Marrone 2006

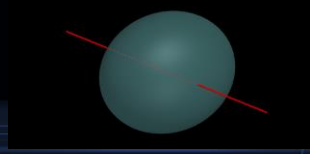
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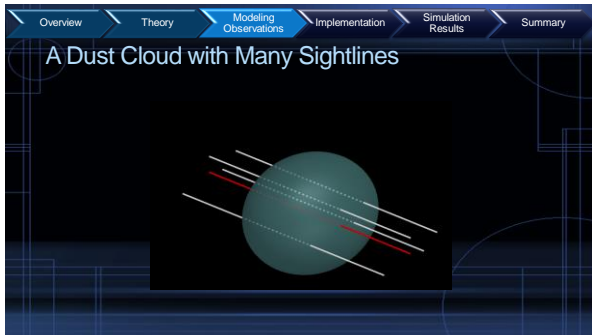
A Dust Cloud

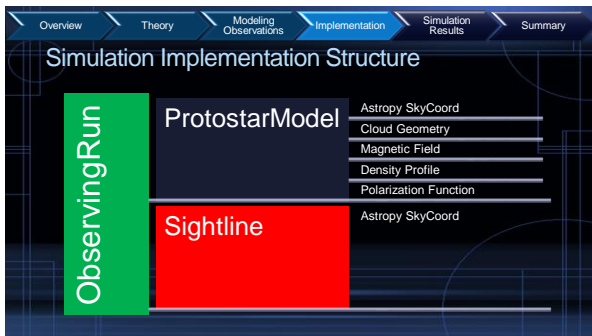


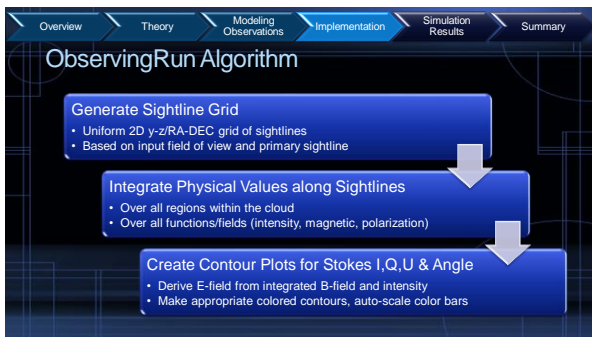
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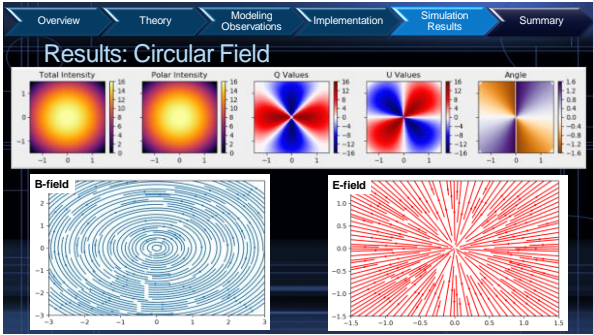
A Dust Cloud with a Sightline

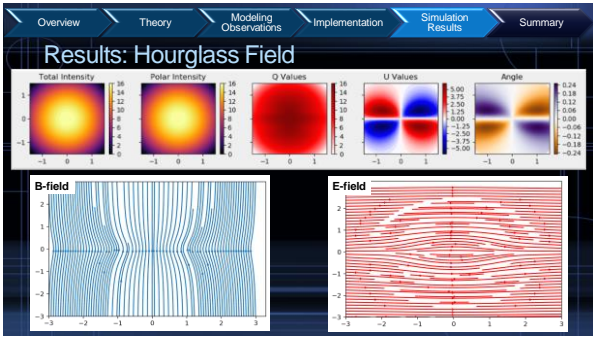


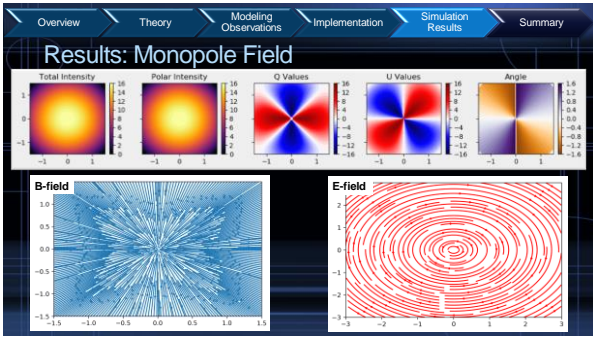


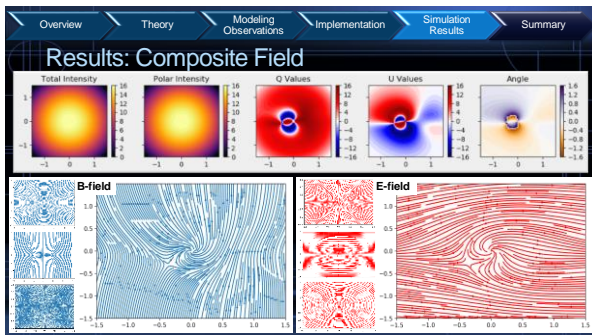












Summary

- The algorithm for polarization observations of different magnetic morphologies is functional.
- Plots of I,Q,U values are logical and consistent.
- Implementation is scalable and portable (using Python and Anaconda).
- Source code is publicly available with documentation:
 - https://github.com/psmd-iberutaru/Akamai_Internship

Future Progress

- Compare simulated models to real observed polarization data.
 - Test different combinations of the three magnetic fields.
 - Add new magnetic field functions.
 - Use different cloud shapes, density profiles, and polarization functions.

Acknowledgments

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 - The Daniel K. Inouye Solar Telescope
 - National Science Foundation
 - The University of Hawai'i at Hilo
 - Canada-France-Hawai'i Telescope

A Bit More Complex Geometries

