Outline of things I want in my prospectus

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September 7, 2016

1 Why these calculations matter

- Zhang [1] mentions that these calculations will benefit the fields of nuclear matter structure and neutron stars. She quotes the papers by Heiselberg2000 [2], Lattimer2001 [3], and Lattimer2004 [4]. She also mentions a paper by Lorenz1993 [5] which talks about predicting the equation of state and mass density of neutron star interiors.

2 What others have done, plus their limitations

- Zhang [1] cites a papers that gives a good description of the shell model, Dean2007 [6].

2.1 What are OUR limitations?

- Could those limitations lead to a new project?

3 What you did, with results

4 What to do next

References

[1] Jie Zhang. *Spin Orbin Interactions in Nuclear Matter with Auxiliary Field Diffusion Monte Carlo*. PhD thesis, Arizona State University, November 2014.

[2] Henning Heiselberg and Vijay Pandharipande. Recent progresses in neutron star theory. *Annu. Rev. Nucl. Part. Sci.*, 50:481, 2000.

[3] J. M. Lattimer and M. Prakash. Neutron star structure and the equation of state. *Astrophys. J.*, 550:426, 2001.

[4] J. M. lattimer and M. Prakash. The physics of neutron stars. *Science*, 304:536, 2004.

[5] C. P. Lorenz, D. G. Ravenhall, and C. J. Pethick. Neutron star crusts. *Phys. Rev. Lett.*, 70:379, 1993.

[6] David J. Dean. Beyond the nuclear shell model. *Physics today*, 60:48, 2007.