

**Referee report of the PhD thesis of RNDr. Stanislav Gunár "Multidimensional radiative transfer in quiescent prominences"**

The PhD thesis of RNDr. Stanislav Gunár is devoted to the study of the radiative transfer in quiescent prominences. This is a very topical problem because the derived line profiles can be directly compared with that observed with the SOHO spacecraft. The analysis presented in the thesis is very important for our understanding of the physical conditions in the prominences.

The models used for the description of quiescent prominences and the method of the solution of the radiative transfer equation are described in the first part of the thesis. The results of the studies on which the author participated are briefly summarised in the second part of the thesis. A more detailed description of these studies is given in the appendix, where individual papers on which the author participated are included.

I have just few minor remarks concerning the presented thesis. According to the introductory part "The prominence plasma contains roughly 90% of hydrogen." Is this the number density ratio? Is the chemical composition of the prominence plasma same as the chemical composition of solar atmosphere? Only hydrogen seems to be included for the modelling. What is the influence of other elements? On page 25 it is first stated that in the statistical equilibrium the level populations do not vary with the time, however the equations of the statistical equilibrium are written as a time-dependent ones. The units are missing in Figs. (5.6) and similar ones. Are the parameters of prominences derived from the fitting of observed line profiles unique? What could be the cause of discrepancies between theoretical and observed line profiles in Fig. (5.12)?

The thesis is well written. The author obtained valuable scientific results during his PhD study. The presented thesis fulfils the requirements for the PhD thesis and I recommend RNDr. Stanislav Gunár to be awarded a PhD degree after a successful defence of the thesis.

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