Title: X-ray emission of star-forming dwarf galaxies

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Abstract: This bachelor's thesis deals with star-forming dwarf galaxies that were proposed to host an Active Galactic Nucleus (AGN) based on the measured X-ray excess over the prediction from star-formation processes. For the studied sample, we compared different methods of X-ray luminosity calculations from the star formation rate (SFR). From the optical emission line measurements, we estimated the galaxy metallicities using three distinct methods to include the metallicity effects in the X-ray luminosity predictions. We found that the galaxy metallicities are on average sub-solar, but not sufficiently low to explain the measured X-ray luminosity. We compared the studied sample with other similar galaxies in the luminosity-SFR-metallicity plane showing their different position from purely star-forming galaxies. We discuss possible sources for the measured X-ray excess as well as the implication of the found results on the AGN diagnostics in dwarf galaxies.

Keywords: Dwarf galaxies, star formation, X-ray astronomy