Herschel Data Reduction

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ESA's Herschel Space Observatory [1] was launched 14th of May, 2009. Since then, it has been observing the 'cool universe' in far-infrared (FIR), in approximately 55-671 μm wavelength range with both photometry and spectroscopy. This makes it ideal in studying galactic, dense, cold cores emitting in FIR, the objects of interest of the Galactic Cold Cores Open Time Key Programme [2], which was awarded 150.9 hours of observing time.

Herschel Interactive Processing Environment (HIPE) [3] application is a joint development by the Herschel Science Ground Segment Consortium, consisting of ESA, the NASA Herschel Science Center, and the HIFI, PACS and SPIRE consortia. The software is coded in Java and Jython, and runs on Linux, Windows, and Macintosh platforms. The purpose of HIPE is to help users access the Herschel data, perform interactive data reduction, visualize and manipulate data and perform science analysis. It also provides the pipeline scripts used in reducing the data into the Herschel Science Archive.

The Galactic Cold Cores Open Time Key Programme has conducted photometric observations to 112 different fields using the 100 and 160 μm channels of the PACS [4] instrument, and the 250, 350 and 550 μm channels of the SPIRE [5] instrument of Herschel. In this presentation, I will go through the reduction steps of the latest version of HIPE when reducing the data from these two instruments. I will highlight the modifications we have made to the official pipeline to improve the resulting maps, especially the inclusion of the Destriper Task developed in the NASA Herschel Science Center. I will summarize the current state of the Herschel data reduction with regards to the Cold Core Programme, and the future plans.

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