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The Multi3D extension for DISPATCH: A task based approach to NLTE radiative transfer

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With next-generation astronomical facilities like WEAVE, 4MOST, and SDSS-V large datasets of high-quality stellar spectra will become available soon. The need for cutting edge 3D non-LTE radiative transfer codes is clear, but the demand for easy-to-use spectrum synthesis tools is even greater. We aim to provide both by supplying a non-LTE RT module based on the Multi3D code to the recently published DISPATCH framework. The strong scaling capabilities of the DISPATCH framework as well as its already implemented magneto-hydrodynamics (MHD) solvers promise to produce time-dependent non-LTE spectra if combined with Multi3D.

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