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### A numerical model for multigroup radiation hydrodynamics

We present our latest development in numerical radiation hydrodynamics: a multigroup model for simulating radiative flows in environments where opacities vary with frequency, a situation omnipresent in astrophysics. This offers a much more realistic description of interstellar gas dynamics compared to previous grey models. The frequency domain is subdivided into a finite number of bins, in each of which we use the M1 closure to define the radiative pressure in terms of the radiative energy and flux. The radiation is fully coupled to the hydrodynamics in the comoving frame of the fluid. We adopt a finite volume method in the frequency domain to calculate the Doppler-shifting terms which allow energy transfers from one group to another. We illustrate the capabilities of our model with a series of tests.