

## 1 Meeting on 6 September 2019

- overview of Petnica summer institute on Astrophysics
- question: manual by Puls: why is isotropic distribution sampled from  $\mu\mu$ ?
- `pcyg.f90` program
- practical arrangements
- SKIRT code
- discussion of paper (Dimarco+2018)

## 2 Meeting on 23 September 2019

- convergence plots
- relation  $N \sim \tau + \tau^2/2$
- limb darkening

## 3 Meeting on 30 September 2019

- discussion about  $x_{\min}$  and  $x_{\max}$
- discussion about introduction of second line.
  - take into account the Doppler shift because you have two different frames
  - make them radially streaming (release)
  - do step for step:
    - \* begin with creating a correct well
- normalized frequency:  $x = \frac{\nu - \nu_0}{\nu_0} \frac{c}{v_{infty}}$
- adding other resonance frequencies, involves enlarging the frequency frame.
- about the goal of the master thesis. Making a master thesis is not doing a course where all is well-defined and *a priori* known.

## 4 Meeting on 30 October

with Dylan and Luka.

- question about MC limb darkening
- the quantity  $\dot{M}$  is a constant. From continuity of mass

$$\frac{d\rho}{dt} + \nabla \cdot (\rho v) = 0 \quad (1)$$

In steady-state and in spherical symmetry

$$\frac{1}{r^2} \frac{\partial(r^2 \rho v)}{\partial r} = 0 \quad (2)$$

- discussion about computing luminosity for `pcyg` profile. Take into account changing frequency for energy balance.
- change  $\frac{dL}{dr}$  into  $\frac{dL_\nu}{dr}$