

## **Dynamical processes in the radiation zones of rotating stars**

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The standard model of stellar structure, although it presently includes convective overshoot, microscopic diffusion, gravitational settling and radiative acceleration, is still unable to account for various observational facts, and there is now a large consensus that some "extra mixing" must occur in the radiation zones. To account for such mixing, the better way is to examine in details transport processes which are taking place in stellar radiative regions: the differential rotation and the associated large-scale meridional circulation and shear-induced turbulence, the fossil magnetic field and the internal gravity waves. In this talk, I will give a detailed state of art for the modelling of each of them with a peculiar attention given to the magnetic mechanisms and I will discuss what should be improved in a near future.