

# Probing Convective Mixing in Stellar Interiors with $\alpha$ Centauri A and B

POSTER ON-LINE

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**Abstract.** The bright nearby binary  $\alpha$  Centauri constitutes an excellent laboratory for testing stellar evolution models. The mass, radius, and luminosity of  $\alpha$  Cen A and B are known to better than 1% accuracy thanks to recent interferometric and adaptive optical observations, and  $p$ -mode oscillations have been observed in both stars. We present new stellar models which fit simultaneously the classical and seismic observations, with particular emphasis on the convective mixing length parameter MLT – the adaptivity of which is necessary to fit the models to observations. The oscillation data provide an important constraint on the models, as the small frequency separation is sensitive to the composition gradient in the core of the stars, while the large frequency separation constrains the mean density of the stars, providing an independent check on the mass and radius.

**Keywords.** Binaries: spectroscopic, stars: oscillations, stars: fundamental parameters

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For the full poster, see <http://dx.doi.org/10.1017/S1743921318002831>