Limb Darkening Pierre Kervella

## **VLTI/PIONIER** observations





# Limb darkening (infrared)



 Residuals are significant and point at a poor knowledge of the opacity of the H<sup>-</sup> anion







## **Betelgeuse / PIONIER**



Montargès et al. 2016, A&A, 588, A130



Espinoza & Jordan 2015, MNRAS.450, 1879

- α Cen A: solar-like
  G2V, a bit bigger and more massive, a bit older
- α Cen B: cooler, less
  massive than Sun,
  K1V dwarf
- Betelgeuse: red supergiant







Bigot et al. 2006, A&A, 446, 635

### **Antares / PIONIER**



Montargès et al. 2017, A&A, 605, A108