



Contribution ID: 377

Type: Poster

## On the sign of population lensing effect in Chromium-doped materials

We report measurements of polarisability changes  $\Delta\alpha$  between the excited and ground states of the chromium active ions in a laser material by using two different methods (time-resolved divergence diagnostic, Z-scan techniques). The first one indicates that  $\Delta\alpha < 0$  (converging population lensing), while the second one gives  $\Delta\alpha > 0$  (diverging population lensing). This discrepancy has been resolved by introducing the concept of correlation collapse between the centre and the wings of a laser beam subject to intra-cavity clipping.

**Primary authors:** Mr TRAICHE, Mohamed (CDTA); Mr GODIN, Thomas (CIMAP)

**Co-authors:** Prof. AIT-AMEUR, Kamel (CIMAP); Dr FROMAGER, Michael (CIMAP); Prof. MONCORGÉ, Richard (CIMAP); Prof. CATUNDA, Tomaz (Universidade de Sao Paulo)

**Presenter:** Mr GODIN, Thomas (CIMAP)

**Track Classification:** Track C - Lasers, Optics and Spectroscopy