Non destructive qualitative analysis of crystallinity via X-ray diffraction measurements

Simone Napolitano
Mentor: *Riccardo DeSalvo*

To control the quality of flex-joints in mirror suspensions for Advanced LIGO a new non-desctructive quantitative analysis via X-ray diffraction here described, has been developed. In order to check the validity of such technique, data collected on the same samples via DSC [differential scanning calorimeter] are compared. This new technique may allow determination of volume fraction to a precision of the order of 1% for highly amorphous sample (>85% amorphous phase volume), and a precision of the order of 5% for samples with lower amorphous phase volume.