



Figure 8: Typical time evolutions of normalized leakage currents of the four SCT modules groups, one each from (a) Barrel 3, (b) Barrel 6, (c) Endcap-C outer and (d) Endcap-A inner regions. Top of each plot shows a history of deduced sensor temperatures, while the second is the leakage current data normalized to 0°C and Hamburg model prediction. Each data point represents an average of time-weighted leakage current means over 30-56 modules in a single physics or calibration run. Bottom two plots show the ratios of data/model predictions using Hamburg and Sheffield models, using the same conversion factors of Fluka transport simulations. Thin/thick colored bands show model uncertainties with/without the error of the main radiation damage constants,  $\alpha_0^*$  or  $A_1$  (See Sec. 3.2).