

# Ageing and probabilities of exceeding the mean

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We compare ageing rates with respect to close related criteria. We shall be interested in the convex and star-shaped ordering, that are distinguished by the requirement of simultaneity of starting time. Using a sign variation technique we characterise ageing rates within families of distributions. Further extensions to maxima of random variables are considered, highlighting the different behaviours with respect to the above criteria. As a consequence, we derive some monotonicity properties for probabilities of exceeding mean values.

This is joint work with Idir Arab (CMUC, Univ. Coimbra), Milto Hadjikyriakou (Univ Lancashire, Cyprus), Beatriz Santos (CMUC, Univ. Coimbra) and Tilo Wiklund (Univ. Uppsala, Sweden).