

LIMITING BEHAVIOUR OF THE MEAN RESIDUAL LIFE

DAVID M. BRADLEY AND RAMESH C. GUPTA

*Department of Mathematics and Statistics, University of Maine, Orono, ME 04469-5752, U.S.A.,
e-mail: bradley@math.umaine.edu; rcgupta@maine.maine.edu*

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Abstract. In survival or reliability studies, the mean residual life or life expectancy is an important characteristic of the model. Here, we study the limiting behaviour of the mean residual life, and derive an asymptotic expansion which can be used to obtain a good approximation for large values of the time variable. The asymptotic expansion is valid for a quite general class of failure rate distributions—perhaps the largest class that can be expected given that the terms depend only on the failure rate and its derivatives.

Key words and phrases: Mean residual life, limiting behaviour, asymptotic expansion, failure rate, hazard function.