

HEAVY TRAFFIC LIMITS AND APPLICATIONS TO INSURANCE AND PENSION FUND DYNAMICS

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The theory behind heavy traffic approximations has attracted a great deal of attention in Operations Research. This theory has been applied in diverse areas in the context of operations management and related applications. An area that has not been traditionally studied in light of this theory is that of life insurance mathematics, including pension fund dynamics. In this talk we revisit some of the traditional life insurance models using the heavy traffic approximations and in particular many server queues. Moreover, we discuss sample path large deviations results for infinite server queues and their application to life insurance portfolios and new pension fund models obtained from a heavy traffic perspective. Part of our objective is to show that heavy traffic approximations have a great potential of applicability in this area.