

QUEUES AND RISK MODELS WITH SIMULTANEOUS ARRIVALS

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We focus on a particular connection between queueing and risk models in a multi-dimensional setting. We first consider the joint workload process in a queueing model with parallel queues and simultaneous arrivals at the queues. For the case that the service times are ordered (from largest in the first queue to smallest in the last queue) we obtain the Laplace-Stieltjes transform of the joint stationary workload distribution. Using a multivariate duality argument between queueing and risk models, this also gives the Laplace transform of the survival probability of all books in a multivariate risk model with simultaneous claim arrivals and the same ordering between claim sizes. (Joint work with Onno Boxma, Jacques Resing and Erik Winands).