Random partition masking model for censored and masked competing risks data

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Abstract   We consider the parametric estimation with right-censored competing risks data and with masked failure cause. We propose a new model, called the random partition masking (RPM) model. The existing model based on the so called symmetry assumption, but the RPM model does not need the symmetry assumption. We propose a wide class of parametric distribution families of the failure time and cause, which does not need the assumption of independence between the components of the system. We also study the asymptotic properties of the maximum likelihood estimator under the new model, and apply our procedure to a medical and an industrial data sets.