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**Jiaping Wang\*** (jwang@math.binghamton.edu), Mathematical Science Department, PO BOX 6000, Binghamton, NY 13902-6000, **Qiqing Yu**, Mathematical Science Department, PO BOX 6000, Binghamton, NY 13902-6000, and **George George Y. C. Wong**, Strang Cancer Prevention Center, 428 E 72nd Street, Ithaca, NY 10021. *The Generalized MLE With Interval-Censored And Masked Competing Risks Data.*

We consider the estimation problem of the joint cumulative distribution function (cdf) of the failure time  $T$  and the failure cause  $C$  of a  $J$ -component series system. The study is motivated by a cancer research data with interval-censored (IC)  $T$  and masked  $C$ . This type of data is called the interval censored and masked competing risks (ICMCR) data. We propose to estimate the cdf by the generalized maximum likelihood estimator (GMLE). In general, there is no explicit solution for the GMLE based on the ICMCR data. We discuss the algorithm for the GMLE. We show that with the continuous right-censored and masked competing risks data the standard GMLE is inconsistent. However, our simulation results suggest that with ICMCR data the GMLE is consistent. Moreover, we study the empirical convergent rates of the GMLE through simulation. (Received September 13, 2008)