1053-62-10   **Yanqing Sun**, **Rajeshwari Sundaram** and **Yichuan Zhao*** (`matyiz@langate.gsu.edu`),
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Empirical Likelihood Inference for the Cox Model with Time-dependent Coefficients via Local Partial Likelihood.

The Cox model with time-dependent coefficients has been studied by a number of authors recently. In this paper, we develop empirical likelihood (EL) pointwise confidence regions for the time-dependent regression coefficients via local partial likelihood smoothing. The EL simultaneous confidence bands for a linear combination of the coefficients are also derived based on the strong approximation methods. The EL ratio is formulated through the local partial log-likelihood for the regression coefficient functions. Our numerical studies indicate that the EL pointwise/simultaneous confidence regions/bands have satisfactory finite sample performances. Compared with the confidence regions derived directly based on the asymptotic normal distribution of the local constant estimator, the EL confidence regions are overall tighter and can better capture the curvature of the underlying regression coefficient functions. Two data sets, the gastric cancer data and the Mayo Clinic primary biliary cirrhosis data, are analysed using the proposed method. (Received April 27, 2009)