

**Forward and backward recurrent marker processes in the presence of  
informative terminal events**

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In biomedical follow-up studies, marker measurements are frequently collected or observed conditioning on the occurrence of recurrent events. In many situations, marker measurement does not even exist unless a recurrent event took place. A recurrent marker process is defined using both recurrent events and markers where these two kinds of measurements are possibly correlated with each other. The collection of recurrent marker data is typically terminated by administrative censoring or occurrence of a terminal event such as death. This talk will consider forward and backward recurrent marker processes, where the forward process uses a conventional time-origin and counts time forward, and, in contrast, the backward process uses the terminal event time as the time-origin and counts time backward. Definitions, models and estimation related to these two kinds of processes will be discussed in this talk. Medical cost data from a cancer-related example will be presented to illustrate the proposed models and methods.