
SHAHEDUL KHAN, University of Saskatchewan

Modeling a Mixture of Linear and Changepoint Trajectories for Longitudinal Time-Series Data

Longitudinal changepoint data arise in many applications. Examples include transition of core body temperature following the hypothermia therapy and prostate-specific antigen levels following treatment. The trend change occurs due to a shock (e.g., treatment) to the system. Thus, an individual exhibiting a linear trend could be an indication of insignificant effects of the shock. One of the goals of this type of study is to investigate whether the shock is significantly associated in changing the trajectory trend. We develop bent-cable methodology accounting for trajectories exhibiting either a linear trend or a trend change characterized by gradual or abrupt transition.