

Routing in Delay Tolerant Networks is very challenging because of frequent disconnections. One cause of disconnection is node movement. Disconnections can be overcome by finding a set of sequential opportunistic encounters between pairs of mobile nodes. These encounters can be used for message forwarding and delivery. In this context, understanding user mobile behaviour is essential to design effective and efficient network protocols. This paper presents a generic methodology to model and find periodic encounter patterns by using the auto-persistence function and detection techniques derived from it. From the studies on four real mobility traces, we are able to detect strong weekly periodic encounter patterns with an accuracy of up to 100\%. The experimental results show that periodic encounter patterns in real mobility traces do not last long, e.g., years, because they are interrupted by unexpected events from time to time. Nonetheless our experimental results show that those periodic encounters can still last up to a few months. Furthermore, we show that, for some of the mobility traces, the network formed by periodic encounters forms a small-world structure.