1086-05-2083 **Hemanshu Kaul*** (kaul@iit.edu), Department of Applied Math, 10 W 32 St., Chicago, IL 60616. *Temporal Scale for Dynamic Graphs.*

Graphs that arise in applications are inherently dynamic - they change with time. We think of a dynamic graph as a temporal stream of graphs (each denoting the interactions observed at a point in time) over a fixed set of vertices. The interactions that give rise to the dynamic graph can occur over a wide range of time scales - from seconds to years. However, such dynamic graphs are often aggregated (as a static graph) with no regard to the underlying (hidden) time scale. Or, even more importantly, when such data is analyzed it is difficult or impossible to find the correct time scale for aggregation of such a dynamic graph in order to find interesting patterns arising within this process. The mismatch between the inherent temporal scale of the underlying process and the scale at which the analysis is performed can obscure important insights and lead to wrong conclusions.

In this talk, we will give a short introduction to a formalization of this problem and to related fields of study. The focus will be on an axiomatic description for this problem, and computational/algorithmic approaches towards resolving it.

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