

Methods for dynamic network analysis have greatly advanced in the recent decade. This article extends current methods of dynamic network logistic regression (DNR), a subfamily of the Temporal Exponential-family Random Graph Models, to network panel data which contain missing data in the edge and/or vertex sets. We begin by reviewing DNR inference in the complete data case. We then provide a missing data framework for DNR families akin to that of Little and Rubin (2002) and Handcock and Gile (2010). We discuss several methods for dealing with missing data, including multiple imputation. We consider the computational complexity of the multiple imputation methods in the DNR case and propose a scalable, design-based approach that exploits the simplifying assumptions of DNR. We dub this technique the “complete-case” method. Finally, we examine the performance of this method via a simulation study of induced missingness in two classic network data sets.