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Reproducibility of graph metrics of human brain structural networks

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ABSTRACT

Recent interest in the human connectome has led to the application of graph theoretical analysis to human brain structural networks, in particular white matter connectivity inferred from diffusion imaging and fiber tractography. While these methods have been used to study a variety of patient populations, there has been less examination of the reproducibility of these methods. These graph metrics typically derive from fiber tractography, however a number of tractography algorithms exist and many of these are known to be sensitive to user-selected parameters. The methods used to derive a connectivity matrix from fiber tractography output also influence the resulting graph metrics. Here we examine how these algorithm and parameter choices influence the reproducibility of proposed graph metrics.

Keywords: Structure Tractography Connectivity Brain Network Reproducibility

1 INTRODUCTION

Prior work Bassett et al. (2011); Cheng et al. (2012); Irimia and Van Horn (2012); Owen et al. (2013); **?**

2 MATERIAL & METHODS

Science goes here

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$$\sum x + y = Z \tag{1}$$

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SUPPLEMENTAL DATA

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