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**Allison Henrich\***, 901 12th Ave, Seattle, WA 98122, and **Tom Boothby** and **Alexander Leaf**.

*Minimal Diagrams of Free Knots.*

Recently, Manturov introduced a generalization of virtual knots and strings called free knots. There are several ways of finding minimal crossing diagrams of free knots, particularly using graphs that have the property of being irreducibly odd. We will investigate the structure of irreducibly odd and other families of graphs that produce minimal diagrams of free knots. (Received January 20, 2012)