

1096-VN-1746 **Charles Suer*** (suerchaj@gmail.com), University of Louisville, Department of Mathematics, 328
Natural Sciences Bldg, Louisville, KY 40292-0001. *Extending the PC-Tree Algorithm to the
Torus*. Preliminary report.

The PC-Tree Algorithm of Shih and Hsu (1999) is a practical linear-time planarity algorithm that provides a plane embedding of the given graph if it is planar and a Kuratowski subdivision otherwise. We discuss extending the PC-Tree Algorithm to a polynomial-time toroidality algorithm. As a proof-of-concept, we show how to accomplish this for $K_{3,3}$ -free graphs. If time permits, the general toroidality checking algorithm will also be considered. (Received September 16, 2013)