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Sergey Bezuglyi* (sergii-bezuglyi@uiowa.edu), University of Iowa, Iowa City, IA 52242, and
Palle E.T. Jorgensen. *Monopoles, dipoles, and harmonic functions on Bratteli diagrams.*

In our study of electrical networks we develop two themes: finding explicit formulas for special classes of functions defined on the vertices of a transient network, namely monopoles, dipoles, and harmonic functions. Secondly, our interest is focused on the properties of electrical networks supported on Bratteli diagrams. We show that the structure of Bratteli diagrams allows one to describe algorithmically harmonic functions as well as monopoles and dipoles. We also discuss some special classes of Bratteli diagrams (stationary, Pascal, trees), and we give conditions under which the harmonic functions defined on these diagrams have finite energy. (Received February 21, 2016)