1035-11-388   **Florian Breuer*** (`fbreuer@sun.ac.za`), Department of Mathematical Sciences, Stellenbosch
University, Stellenbosch, 7600, South Africa. *Ducci Sequences in Higher Dimensions.*

A Ducci sequence is a sequence of integer n-tuples obtained by iterating the map $(a_1, \ldots, a_n) \mapsto (|a_1-a_2|, |a_2-a_3|, \ldots, |a_n-a_1|)$. Such sequences have been studied since the 1930s. In this talk, we first give a brief overview of this topic, and then generalize to sequences of d-dimensional arrays, extending some of the basic results on Ducci sequences to this case, and pointing out some new phenomena that occur. Our main tool is the description of Ducci sequences modulo two in terms of polynomials over the field $\mathbb{F}_2$. (Received September 05, 2007)