

1135-VL-1109 **Michelle Rabideau*** (michelle.rabideau@uconn.edu) and **Ralf Schiffler**. *Markov number ordering conjectures*. Preliminary report.

A Markov number is a number in the triple (x, y, z) of positive integer solutions to the Diophantine equation $x^2 + y^2 + z^2 = 3xyz$. Markov numbers are a classical topic in number theory related to many areas of mathematics such as combinatorics and cluster algebras. Markov numbers are related to cluster algebras by Markov snake graphs, where a Markov snake graph is the snake graph of a cluster variable of the once punctured torus. The number of perfect matchings of a Markov snake graph, given by the numerator of the associated continued fraction, is a Markov number. In this talk, we discuss three conjectures given in Martin Aigner's book [A] that provide an ordering on the Markov numbers $m_{p/q}$ for a fixed numerator p , fixed denominator q and a fixed sum $p + q$.

[A] M. Aigner, *Markov's theorem and 100 years of the uniqueness conjecture*, Springer 2010 (Received September 19, 2017)