Recursively defined functions on the Farey tree and the codenominator

A. Muhammed ULUDAG

Codenominator is a function defined recursively on the Farey tree and yields an extension of the Fibonacci sequence to rationals as an integral-valued map.
After discussing its arithmetic properties, we will show how it is related to Dyer's outer automorphism of the group PGL(2,Z) and the involution Jimm of the rea lline. Automorphisms of the cubic tree studied by Djokovic- Miller and Conder provide analogues of the codenominator. We will also explain its connection to quantizations of real numbers recently introduced by Ovsienko and Mourier-Genoud. The talk will provide many questions and conjectures related to these functions.