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A GRAPH-THEORETIC APPROACH TO STERN'S DIATOMIC SERIES

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Abstract of Poster Presentation: Sterns Diatomic Series exist in a close relationship to widespread mathematical concepts such as the Calkin-Wilf tree, Farey sequence, Fibonacci numbers, et cetera. However, most of the analyses of the Stern series have occurred via classic combinatorial or number theoretic techniques. Innovatively, we take a graph-theoretic approach: by representing the series as a graph and using the new representation to draw conclusions. This visual allows for visual confirmation of properties of the series as well as gives rise to new conjectures, previously not obviously visible due to cumbersome notation.

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