Origin of Fourier Series II

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This is the second part of the overview on the origin of Fourier Series (first part by Gerhard Wanner). We present a little-known result of Johann Bernoulli involving cycloidal curves and Euler's first attempt to prove it using Fourier Series. After discussing a recently discovered manuscript of Lagrange giving the first correct proof of this result, we present an unexpected link with well-known combinatorial objects. Our approach allows a simplification of the proof of a fundamental bijection first discovered by Gelineau, Shin and Zeng (2010).

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