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Valerio De Angelis* (vdeangel@xula.edu), Mathematics Department, Xavier University of Louisiana, 1, Drexel Drive, New Orleans, LA 70125. *The Stern diatomic sequence $a(n)$ as a function of the gaps between 1's in the binary expansion of n .*

Let $a(n)$ be the Stern's diatomic sequence, and let x_1, \dots, x_r be the distances between successive 1's in the binary expansion of the (odd) positive integer n . We show that $a(n)$ is obtained by evaluating some generalized Chebyshev polynomials when the variables are given the values $x_1 + 1, \dots, x_r + 1$. Using this representation we derive an arithmetic property of $a(n)$, as well as a determinant expression for it. (Received September 08, 2016)