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Numerical Tribute to Achievement of Euler CARLOS FIGUEROA-NAVARRO, División de Ingeniería, Departamento de Ingeniería Industrial, Universidad de Sonora, MARTÍN EDUARDO MOLINAR-TABARES, Organismo de Cuenca Noroeste, Comisión Nacional del Agua, LAMBERTO CASTRO-ARCE, División de Ciencias e Ingeniería, FMI, Unidad Regional Sur, Universidad de Sonora, JULIO CESAR CAMPOS-GARCÍA, Campus Cajeme, Universidad de Sonora —
This work aims to make a tribute to one of the world's brightest personalities as it was the mathematical physicist Leonhard Euler (1707-1783). Some results where the influence of Euler persists with the novelty of applying numerical analysis using Matlab are here exposed. A first analysis was done with the series that defines Euler numbers and polynomials of Frobenius-Euler; another result is the characterization of the functions that carry to Euler-Macheroni constant. In hydrodynamics is also feasible to evaluate graphically the relationship between dimensions in diameter and the exit angle of the height of Euler for turbomachines. In differential equations of Cauchy-Euler solutions for the cases of distinct real roots and complex roots are generated. Furthermore we report the generation of the Fourier series and the Fourier transform calculated by using Direct Commands of Matlab. In variational calculus it is possible to obtain plots from a problem of the Euler Lagrange equations. Finally, the Euler function is analyzed. Our purpose is to present a tribute to this giant of science also it could be an excuse to study his legacy by utilizing modern computational techniques.

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