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History of Floquet's Characteristic Equation

A second order ordinary differential equation with real periodic coefficients mathematically describes synthetic or naturally occurring systems that involve periodic structure. The solution to this type of equation was fully investigated by G. Floquet in 1883. Floquet's characteristic equation is an eigenvalue equation that arises in the determination of a solution to the differential equation. Floquet's theorem states that when the roots of the characteristic equation are distinct, the solutions satisfying the differential equation are linearly independent. Floquet's characteristic equation has found wide application in stability theory and wave propagation in periodic structure spanning many fields of science and engineering. We trace the history of Floquet's characteristic equation beginning in the late nineteenth century through the twentieth century and finally into the new millennium.