Dynamic Behavior of Circular Ring Impinging on Ideal Elastic Wall: Analytical Model and Experimental Validation

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Highlights

- Transient dynamic behaviors of a circular ring impinging on an elastic wall are governed by three critical non-dimensional parameters.

- In the whole, the number of collisions increases with the stiffness ratio of the elastic wall to the circular ring.

- Elastic oscillation induced by the collision interaction dramatically reduces the coefficient of restitution.