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عنوان مقاله:

Trajectory Optimization for Steel Balls Impacting on Rectangular Shell Liners in Semi-Autogenous Grinding Mills

محل انتشار:

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خلاصه مقاله:

The extra motion of steel balls in Semi-Autogenous Grinding (SAG) mills and their impact into the liners not only wastes the energy provided to the mill but also causes a great deal of damage to the liners. In this paper, the trajectory of the motion of steel balls in an industrial SAG mill with rectangular lifters have been derived and the most important design variables governing the impact of steel balls onto shell liners have been identified. The important impact parameters have been plotted and have been discussed in order to point out their relative importance. Therefore, the effective parameters for optimizing the working conditions of the mill in order to avoid severe impacts which lead to the breakage of SAG mill shell liners have been determined. Based on the results of the governing kinetic and kinematic equations of motion derived in this paper, the SAG mill operating parameters can be manipulated in order to obtain the optimum trajectory to achieve optimized working conditions and avoid liner breakage due to impact.

کلمات کلیدی:

Comminution, Semi-Autogenous Grinding Mill (SAG Mill), Liner, Impact.

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