# Newly defined Factor for Grinding Rate Constant on a Stirred ball mill by DEM (Discrete Element Method) Simulation

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Ginding rate constant $K$ for a stirred ball mill was studied by experiment and DEM Simulation. With help of DEM Simulation, forces acting at all the balls in the mill and contact numbers at the balls could be calculated and they are used for the newly defined factor $Fcal$ which is defined as $Fcal=average\ force\ x\ coordination\ number$. The experimental grinding rate constant $K$ at various rotation speed of the mill could be expressed with $Fcal$ as like $K=aFcal + b$. That means the $K$ is propotional to $Fcal$ directly and $Fcal$ shows its possibility to be used as a new factor to evaluate grinding rate constant $K$.