

**Analysis of Rolling Contact Behavior between Wheel and Rail by Large-Scale
Parallel Computing**

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In this paper, we attempt to make dynamic rolling contact analysis between wheel/rail by using the three-dimensional finite element method in large-scale parallel computing. We clarify the mechanical behavior of the contact patch, when a wheel runs at a high speed with loading torque. In order to accelerate the wheel in the minimum rail model in size, the technique of an efficient rail model is developed. In addition, the present method has a technique of dynamic partitioning to limit the contact region between wheel and rail to one partition region on the parallel calculation with the wheel rolling. As a result, it became possible to evaluate the dynamic rolling contact behavior between wheel/rail.