Study of Displacement of Rolling Stock with Air Spring

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In this study, we investigated the influence factors of the lateral displacement of the car-body which occurs when the rolling stock equipped with bolsterless bogies with air springs is passing in the curve section, using a vehicle dynamics numerical simulation program. As a result, it was cleared that the lateral displacement of air springs, the rolling displacement of the car-body and the lateral displacement of wheelsets to tracks were dominant in the car-body lateral displacement. In addition, the combination of the high passenger load factor of the vehicle, the uneven loading of the vehicle and the operation of the differential pressure valve of air springs greatly increases the lateral displacement of the car-body.