

Presentation at Brake Forum in Japan

We'll present a paper at Brake Forum in Japan (November 28–29, 2016), which is the first international forum organized by The Japan Society of Mechanical Engineers.

1. TITLE

Brake Disc Rotor and Judder

2. Presenter

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3. ABSTRACT

Brake NVH is one of the most concerned issues in an automotive-brake system. Among brake NVH problems, brake squeal is a friction-induced self-excited vibration; while brake judder is a forced vibration by the undesirable friction-surface geometry of a brake disc such as large DTV and lateral-runout. Therefore brake disc rotors play a significant role in judder. Brake judder is generally classified into two types: cold and hot. From a viewpoint of brake disc rotors, mechanisms causing brake judder can be classified into four: off-brake DTV growth due to large lateral-runout, on-brake DTV growth due to inhomogeneous material, thermo-mechanical deformation due to high-speed braking, and corrosion. The author presented several papers at the SAE Brake Colloquium and FISITA World Automotive Congress from a comprehensive study to reducing brake judder focusing on the above-mentioned three mechanisms excluding corrosion. In this presentation, some experimental results and analyses are abstracted from previous papers. The effects of material and dimensional homogeneity of brake disc rotors on their differential wear and thermo-mechanical deformation will be discussed.

4. CONTACT

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