Title: Structural and contact analysis of disc brake assembly during single stop braking event

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Abstract: The aim of this paper is to examine stress concentration, structural deformation and contact pressure of brake disc and pads during single braking stop event by employing commercial finite element software, ANSYS. The paper also highlights the effects of using a fixed caliper, different friction coefficients and different speeds of the disc on the stress concentration, structural deformation and contact pressure of brake disc and pads, respectively. Results from the investigation could provide a better explanation of the variation in contact pressure distribution and in turn squeal generation. Thus, this study provides effective reference for design and engineering application of brake disc and brake pad.