

ANSYS - Crack Between Neo-Hookean Material and Rigid Body

Authors: Tianshu Liu and Chia-Hsun Hsieh, Cornell University

[Problem Specification](#)

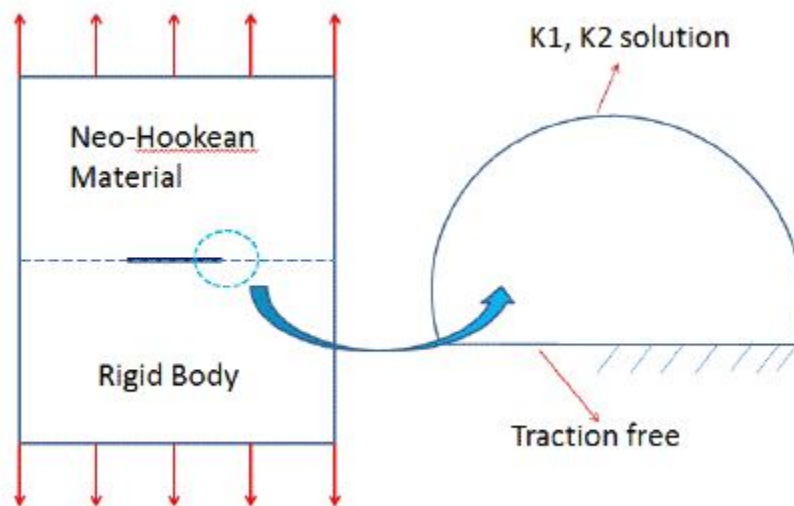
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Problem Specification

An infinitely long plane is subjected to vertical tensile load. As shown in the picture below, half of the infinite plane is Neo-Hookean material and the other half is a rigid body. There is a traction free crack tip with length $2a$ on the interface. The region that will be modeled is a small circle around the crack tip, as shown in the same picture. The crack tip is at the center of the semicircle. Neo-Hookean material will exhibit linear elastic behavior when the strain is small and the linear elastic crack solution will be set as the boundary condition in this model.



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