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V. Chaves, G. Beretta, A. Navarro

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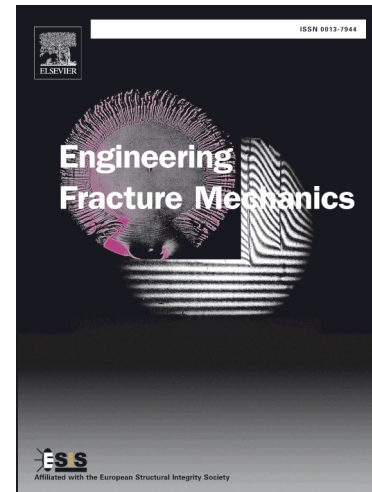
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Biaxial fatigue limits and crack directions for stainless steel specimens with circular holes

V. Chaves ¹, G. Beretta, A. Navarro.

*Departamento de Ingeniería Mecánica y Fabricación,
Escuela Superior de Ingeniería, Universidad de Sevilla,
Camino de los Descubrimientos s/n, 41092 Sevilla, Spain*

Abstract

High cycle fatigue tests have been conducted for stainless steel AISI 304L. The geometry is a thin-walled tube with a passing-through hole. The tests are axial, torsional and in-phase axial-torsional, all of them under load control with $R = -1$. From the tests, the S-N curves are constructed and the fatigue limits are calculated. The crack surface is analyzed, with especial attention to the first 500 μm . The crack has begun close to the point of maximum principal stress at the hole surface and has followed, approximately, the maximum principal stress direction.

Key words: Biaxial test, High cycle fatigue, Notch, Fatigue limit, Crack direction

¹ Corresponding author. Tel: +34-954487311; fax: +34-954487295.

E-mail address: chavesrv@us.es (V. Chaves)

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