The study of defected axisymmetric structures is among important industrial applications. Detection of such defects, and or the evaluation of intrinsic parameter leads to a better design of those mechanical parts. The first part of the conducting research concerns the evaluation of the stress intensity factors (SIF) in axisymmetric elastic structures with internal or circumferential edge crack using the dual boundary element method (DBEM). Its application to axisymmetric problems requires a stress (hypersingular) boundary integral equation together with the displacement (standard) boundary integral equation, one applied to each side of the crack. This process requires a great algebraic handling due to the complexity of the axisymmetric kernels. Crack surfaces are discretized with discontinuous quadratic boundary elements to satisfy the existence of the finite-part integrals and the continuity of the unit outward normal at corners. SIF evaluation is done using displacements extrapolation at the crack tip. Examples of axisymmetric geometries are analyzed and obtained results are compared to others researchers. Damage and Fracture Mechanics Damage and Fracture Mechanics Look Inside Other actions Export citation About this Book Reprints and Permissions Add to Papers Share Share this content on Facebook Share this content on Twitter Share this content on LinkedIn