

		Journal of the Japan Society of Naval Architects and Ocean Engineers			
		The Japan Society of Naval Architects and Ocean Engineers			
Available Volumes Japanese				>> Publisher Site	
Author:	<input type="text"/>	ADVANCED	Volume	Page	
Keyword:	<input type="text"/>	<input type="button" value="Search"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Go"/>



[TOP](#) > [Available Volumes](#) > [Table of Contents](#) > Abstract

ONLINE ISSN : 1881-1760

PRINT ISSN : 1880-3717

Journal of the Japan Society of Naval Architects and Ocean Engineers

Vol. 2 (2005) pp.323-329

[\[Image PDF \(722K\)\]](#) [\[References\]](#)

Effects of Compressive Plastic Zone at the Fatigue Crack Tip on Propagation Behavior

[Yiong Xiong](#), [Junichi Katsuta](#), [Kazuyoshi Kawano](#) and [Takeshi Sakiyama](#)

(Accepted August 25, 2005)

Summary: In this paper, emphasis on physical meanings of hysteresis loops denoting a relationship between loads and strains near the fatigue crack tip, variations of the tensile plastic load zone in loading and the compressive plastic load zone in unloading are studied respectively under various test conditions, and the effects on acceleration, delayed retardation and non-propagation during fatigue crack propagation are also studied. It can be speculated that the compressive plastic zone at the crack tip has some effects on fatigue crack propagation. Furthermore, it is known that the crack closure phenomenon ends after the compressive plastic zone appears but before the minimum load. Therefore, a parameter P_{CF} called the crack closure finish load is presented for evaluating behavior of fatigue crack propagation.

[\[Image PDF \(722K\)\]](#) [\[References\]](#)

Download Meta of Article [\[Help\]](#)

[RIS](#)

[BibTeX](#)

To cite this article:

Yiong Xiong, Junichi Katsuta, Kazuyoshi Kawano and Takeshi Sakiyama: Effects of Compressive Plastic Zone at the Fatigue Crack Tip on Propagation Behavior, Journal of the Japan Society of Naval Architects and Ocean Engineers, (2005), Vol. 2, pp.323-329.



[Japan Science and Technology Information Aggregator, Electronic](#)

