固有変形法による薄板の突合せ溶接での座屈挙動の基礎的研究

目で見る
海外論文発表

王　　江　超*

Fundamental study of buckling behavior in thin plate butt welding by the inherent deformation method

Key Words：Buckling Behavior; Thermal Elastic Plastic; Inherent Deformation Method; Tendon Force

Name of Conference: 9th International Conference on Trends in Welding Research
Meeting Location: Hilton Chicago, Indian Lakes Resort, Chicago, Illinois, U.S.A
Date: June 4-8, 2012
Title of Presentation: Fundamental Study of Buckling Behavior in Thin Plate Butt Welding Using the Inherent Deformation Method

The 9th International Conference on Trends in Welding Research is organized by American Welding Society at Chicago. The conference is a five days of technical programming from 4th to 8th of June. The programs focus on both the fundamentals and applied topics that are related to joining and welding. The participants came from the university and industry all over the world to show the latest developments in modeling and experimental techniques.

During this conference, 9 keynote presentations are given by the famous professors of welding research. The Professors, Tadashi Kasuya and Manabu Tanaka of Osaka University, presented very interesting research topics for keynote session about the cold cracking and visualization of welding arc, respectively. The conference also arranged the hot research topic sessions as following: Microstructure, Residual Stress, Phase Transformation, Fracture Assessment, Solidification, Welding Process and Consumable, Experimental and Modelling, Advanced Welding Method (FSW) and so on.

As a Ph.D. candidate speaker, it is a good opportunity to present my research result and receive helpful suggestions, and also obtain the information of the latest welding research. I did a presentation about the buckling behavior using the inherent deformation theory for the welded structure, which assembled by thin plates of high tensile steel. When the thin plates are employed, the weight of welded structure can be reduced, however, the buckling distortion will occur due to welding process.

Attendee Lunch Keynote Session

会議出席要約

溶接研究に関する第９回国際会議は、アメリカのシカゴで開催され、会議は、６月８日までの５日間開催されました。モデリングと実験的な技術に関し、最新の情報を携え、参加者は世界中から集まりました。この会議の間に、９つの基調講演が著名な教授によって講演されました。今回、自分の研究結果を発表させて頂き有用な提案に理解を示して頂きました。加えて最新の溶接研究の情報を得る良い機会を与えて頂きました。私の発表は、薄いプレートの高張力鋼を用いた溶接構造の座屈挙動を、固有の変形理論を用いて発表しました。結論は、薄いプレートの溶接構造は全重量は減らされることができますが、溶接過程における残留応力のため座屈が発生しやすくなります。薄いプレートの溶接構造の設計の際には座屈に対する考慮が重要である事を示しました。

*Jiangchao WANG
1983年8月生
現在、大阪大学　工学研究科　地球総合工学専攻　船舶海洋工学コース　数理解析学分野　村川研　博士後期　D3
TEL：06-6879-8665
FAX：06-6879-8645
E-mail：jcwang@jwri.osaka-u.ac.jp