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Author(s)	Shiga, Chiaki
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Osaka University

Comments on theoretical prediction models in the symposium.

Chiaki Shiga

Director
Failure Physics Division
National Research Institute for Metals

What is the final goal (objectives) for developing the models?

The following models of items 1) to 4) were presented, but I want to emphasize the importance of item 5).

- 1) Model for good agreement with one experimental phenomenon
- 2) Model for solving the practical problems
residual stress : distortion
hardness : weld cracking
and so on.
- 3) Model for good bead profile of weld metal
- 4) Model for expert system.
- 5) Model for improvement of properties in welded joints to obtain the life extension or to increase in the safety and reliabilities of the structures.

(5-1) Computer models seem to be able to estimate what portion is the most dangerous point in the structure from the view point of fracture.

(5-2) Computer models should be developed for obtaining the improvement of the dangerous points in weld joints for example by using the line heating after welding, such as toughness improvement, reduction or shift of residual stress, improvement of toe profile to avoid the stress concentration.
It is because there seem to be the limitation of welded joint improvement through improvement of the base plate properties.

From the view points of the total cost of structure production it is more economical to improve the dangerous points by treatment of welded joints after welding such as the line heating.

Many models and systematic approach are more requested to achieve the improvement of welded joint properties because it will take longer time for one person's working.

Therefore group working or co-operation are necessary for solving these problems.

It is important that experimental works will be carried for developing the model.