

# The Propulsion Committee

Committee Chairman: Dr. Ki-Han Kim

Session Chairman: Dr. Seung-il Yang

## 1. DISCUSSIONS

### 1.1 Discussion to the 25<sup>th</sup> ITTC Propulsion Committee by Ahmed Derradji, NRC-IOT, Canada

1. In Table 2.3 of the final report, it seems that some of the factors presented could be outliers. For example the value of 1-t from SVA is 0.91 and the mean value is 0.865. The difference is more than twice the standard deviation. If we consider the criteria indicated by the uncertainty analysis committee (outliers are values more than 2 standard deviation, as plotted in the residual plot, see the UA report), then, outliers analysis should be performed. Is it possible that the inclusion of outlier analysis will change the outcome of your conclusions in section 2.26.
2. The value of the standard deviation in table 2.3 is for what? The difference between CFD codes cannot be quantified because there are so many parameters in input and the solution technique can affect the results of the CFD results.

and the mean value (0.865) is 0.045, which is less than twice the standard deviation is 0.026. Therefore, according to the UA report, we do not have to perform the “outliers analysis”. The question (1) is, therefore, irrelevant. (Please note that Question (1) has two typos: “incuklsion” should read “inclusion”, and “2.26” should read “2.2.6”).

2. The standard deviation in Table 2.3 is just for the computed values using different CFD codes. The difference in the computed values of self-propulsion quantities by different CFD codes can be quantified as shown in the table. But the source of discrepancy may be difficult to identify. The main point of showing this table is that various CFD codes, despite different input parameters and solution techniques as the discussor pointed out, can now predict the self-propulsion quantities fairly accurately in comparison with the towing tank experiments.

## 2. COMMITTEE REPLIES

### 2.1 Reply of the 25<sup>th</sup> ITTC Propulsion Committee to Ahmed Derradji

1. Twice the standard deviation is 0.052. The difference between the SVA value (0.91)