Table 1- Submissions for ONRT self-propulsion in calm water at Fr=0.2

Institute	ABS	CSSRC	ECN CNRS	ECN CNRS	HHI	IIHR	IIHR	SJTU
Code	OpenFOAM	FLUENT12	ISISCFD-AD	ISISCFD-FullRANSE	STAR-CCM+	CFDShip-Iowa	REX	OpenFOAM
Turbulence	Two- eq.	Two- eq.	Two- eq.	Two- eq.	Two- eq.	Two- eq.	Two- eq.	Two- eq.
Free Surface	VOF	VOF	VOF	VOF	VOF	Level set	Level set	VOF
Propeller	Discretized	Body Force & Discretized	Body Force	Discretized	Discretized	Body Force	Discretized	Discretized
Motions	6DOF	2DOF (heave,pitch)	3DOF (surge, heave,pitch)	3DOF (surge, heave,pitch)	3DOF (surge, heave,pitch)	4DOF (surge, heave,roll, pitch)	4DOF (surge, heave,roll, pitch)	6DOF
Rudders	Active	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Active
Discretization	Finite Vol.	Finite Vol.	Finite Vol.	Finite Vol.	Finite Vol.	Finite Dif.	Finite Dif.	Finite Vol.
Grid motion	Overset	All moving	Deforming Grid/Overset	Deforming Grid/Overset	All moving	Overset	Overset	Overset
Grid type	Unstructured	Unstructured	Unstructured	Unstructured	Unstructured	Structured	Structured	Unstructured
Grid size	6.3-6.5 M	1.15-2.7 M	6.5 M	9.3 M (Half Domain)	10.7 M	23.2 M	35 M	6.46 M
No .CPU	16	16	24	72	32	224	270	20
CPU Time (CPUh)	3830	NA	320	20000	NA	21500	70000	4100

Table 2- Mean and SD of submission values for KCS calm water resistance at Fr=0.26

	Sinkage [m]	Trim (deg)	n [RPS]
$\bar{S}$	0.236075	-0.04523	8.999
SD%$\bar{S}$	5.59	22.40	3.29

Table 3- Comparison error $E\%D$ for ONRT self-propulsion in calm water submissions at Fr=0.2

No	Institute	Code	Sinkage [m]	Trim (deg)	n [RPS]	Ave
	IIHR	*Experiment*	0.226	-0.0386	8.97	
1	ABS	OpenFOAM	-2.89	-6.63	1.9	**3.81**
2	CSSRC	FLUENT12	-16	-25	**	**20.50**
3	ECN CNRS	ISISCFD-AD	-8.3	11	1.5	**6.93**
4	ECN CNRS	ISISCFD-FullRANSE	-3.3	-13.3	2.6	**6.40**
5	HHI	STAR-CCM+	2.7	6.4	1.4	**3.50**
6	IIHR	CFDShip-Iowa	2.3	-0.4	-5.3	**2.67**
7	IIHR	REX	-1.6	-35.1	1.4	**12.70**
8	SJTU	OpenFOAM	-7.4	-75.3	-5.7	**29.47**
Ave E%D			**-4.31**	**-17.29**	**-0.31**	**7.31**
SD E%D			**5.76**	**26.26**	**3.30**	**11.78**
Ave |E|%D			**5.56**	**21.64**	**2.83**	**10.01**
SD |E|%D			**4.56**	**22.81**	**1.74**	**9.70**

$* \; E\%D = 100 \times (D - S)/D$ where D and S are data and simulation values.

**Propeller RPS is adjusted to the EFD value.

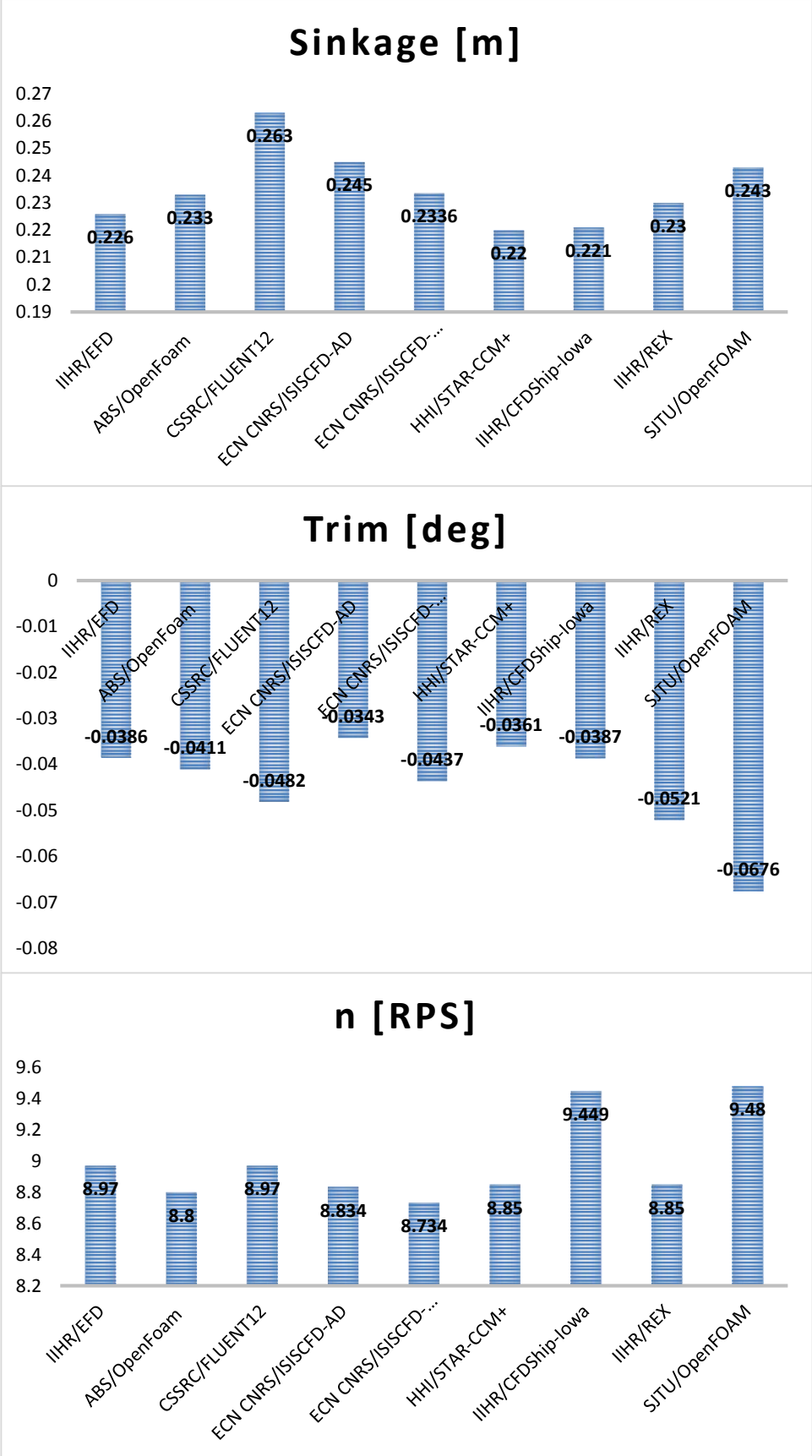

Figure 1- EFD data and submission values for motions and propeller revolution for ONRT self-propulsion in calm water at Fr=0.2