Overview of the submitted results for case 2.1

Calculations from 14 groups were obtained for the evaluation of the open water characteristics, employing 10 solvers for viscous flow and 5 solvers for potential flow. The total number of submitted calculations is 19.

In the following table all participants and the used solvers are listed:

Group	Solver	Acronym
Berg-Propulsion	OpenFOAM	Berg-OpenFOAM
Cradle	SC/Tetra	Cradle-SC/Tetra
CSSRC	ANSYS Fluent	CSSRC-Fluent
HSVA	PPB	HSVA-PPB
	QCM	HSVA-QCM
INSEAN	PFC	INSEAN-PFC
MARIC	ANSYS Fluent	MARIC-Fluent
SSPA	ANSYS Fluent	SSPA-Fluent
SVA	Vortex	SVA-Vortex
TUHH	FreSCO+	TUHH-FreSCO
University of Genua	Panel	UniGenua-Panel
	OpenFOAM	UniGenua-OpenFOAM
	StarCCM+	UniGenua-StarCCM(kw)
	StarCCM+	UniGenua-StarCCM(ke)
University of Triest	ANSYS CFX	UniTriest-CFX
VicusDT	StarCCM+	VicusDT-StarCCM
VOITH	Comet	VOITH-Comet
	OpenFOAM	VOITH-OpenFOAM
VTT	FinFlo	VTT-FinFlo

In the following the data is evaluated with respect to the thrust coefficient K_T and torque coefficient $10K_Q$ and the open water efficiency η_O. For each value an absolute (e.g. ΔK_T) and a relative comparison (e.g. ΔK_T [%]) to the measured values are given. The absolute difference is defined as the difference between the calculated and the measured value, while the relative difference is the same value expressed as percentage with respect to the measured value.

Overview of the submitted results for case 2.2

Calculations from 11 groups were obtained for the evaluation of the flow field, employing 9 solvers for viscous flow and two solvers for potential flow and submitting 13 calculations, of which are two for the comparison of different turbulence models.

In the following table all participants of the case 2.2 and the used solvers are listed:

Group	Solver	Acronym
Berg-Propulsion	OpenFOAM	Berg-OpenFOAM
Cradle	SC/Tetra	Cradle-SC/Tetra
HSVA	FreSCO+	HSVA-FreSCO+
	PPB	HSVA-PPB
INSEAN	PFC	INSEAN-PFC
MARIC	ANSYS Fluent	MARIC-Fluent
SSPA	ANSYS Fluent	SSPA-Fluent
TUHH	FreSCO+	TUHH-FreSCO
University of Genua	StarCCM+	UniGenua-StarCCM(ke)
	StarCCM+	UniGenua-StarCCM(kw)
University of Triest	ANSYS CFX	UniTriest-CFX
VOITH	Comet	VOITH-Comet
VTT	FinFlo	VTT-FinFlo

In the following the data is evaluated with respect to the dimensionless axial $1-(V_x/V_A)$, tangential V_t/V_A and radial V_r/V_A velocity components.

In the LDV measurements the data was collected over one entire propeller revolution. The evaluation however was carried out over only one blade passage. For the evaluation of case 2.2.1-2.2.3 the velocities of the five blade passages were plotted on top of each other. For case 2.2.4 however the mean values of the five measured blade passages are plotted.

Overview of the submitted results for case 2.3

Calculations from 11 groups were obtained for the evaluation of the cavitating propeller, employing 7 solvers for viscous flow and 5 solvers for potential flow and submitting 15 calculations. Among these are submissions of different cavitation models and settings.

In the following table all participants of the case 2.3 and the used solvers are listed:

Group	Solver	Acronym
Berg-Propulsion	Procal	Berg-Procal
Cradle	SC/Tetra	Cradle-SC/Tetra
CSSRC	ANSYS Fluent	CSSRC-Fluent
HSVA	QCM	HSVA-QCM
	PPB	HSVA-PPB
INSEAN	PFC	INSEAN-PFC
SSPA	ANSYS Fluent	SSPA-Fluent
TUHH	FreSCO+	TUHH-FreSCO
University of Genua	Panel	UniGenua-Panel
	StarCCM+	UniGenua-StarCCM
University of Triest	ANSYS CFX(FCM)	UniTriest-CFX(FCM)
	ANSYS CFX(Kunz)	UniTriest-CFX(Kunz)
	ANSYS CFX(Zwart)	UniTriest-CFX(Zwart)
VOITH	Comet	VOITH-Comet
VTT	FinFlo	VTT-FinFlo

At first the cavity surface for different vapour fractions are evaluated, followed by a summary of the computed thrust coefficient for the cavitating propeller. At the end the pressure distribution on different radii are given for the cavitating and non-cavitating propeller.