Code_Saturne User Meeting 2014

Code_Saturne development team

April 2, 2014

User presentations of the **morning**

9:05	Invited Lecture	D. Banner *Head of simulation program*
9:20	Latest news and prospects in *Code_Saturne* from 3.0 to 3.3	Y. Fournier *EDF R&D - MFEE*
9:40	CFD activities at EDF China R&D center – focus on the support to local thermal plants	J. Min *EDF China R&D center*
10:00	CFD activities at EDF UK R&D centre	J. Uribe *EDF R&D UK centre*
10:50	Nuclear production optimization under severe winter conditions	C. Peyrard *EDF R&D - LNHE*
11:10	Application of the new turbo-machinery module in *Code_Saturne* to the study of a mixed flow compressor and co-visualization	S. Rolfo / B. Lorendeau *Daresbury Lab.- UK*
11:40	CFD simulations of the JULIETTE 1/5th-scale PWR model for external boron dilution studies with *Code_Saturne* V3.0	F. Lelong *EDF SEPTEN and R&D*

User presentations of the **morning**

9:05	Invited Lecture	D. Banner *Head of simulation program*
9:20	Latest news and prospects in *Code_Saturne* from 3.0 to 3.3	Y. Fournier *EDF R&D - MFEE*
9:40	CFD activities at EDF China R&D center – focus on the support to local thermal plants	J. Min *EDF China R&D center*
10:00	CFD activities at EDF UK R&D centre	J. Uribe *EDF R&D UK centre*
10:50	Nuclear production optimization under severe winter conditions	C. Peyrard *EDF R&D - LNHE*
11:10	Application of the new turbo-machinery module in *Code_Saturne* to the study of a mixed flow compressor and co-visualization	S. Rolfo / B. Lorendeau *Daresbury Lab.- UK*
11:40	CFD simulations of the JULIETTE 1/5th-scale PWR model for external boron dilution studies with *Code_Saturne* V3.0	F. Lelong *EDF SEPTEN and R&D*

- **EDF Engineering support**

production version V3.0

User presentations of the **morning**

9:05	Invited Lecture	D. Banner *Head of simulation program*
9:20	Latest news and prospects in *Code_Saturne* from 3.0 to 3.3	Y. Fournier *EDF R&D - MFEE*
9:40	CFD activities at EDF China R&D center – focus on the support to local thermal plants	J. Min *EDF China R&D center*
10:00	CFD activities at EDF UK R&D centre	J. Uribe *EDF R&D UK centre*
10:50	Nuclear production optimization under severe winter conditions	C. Peyrard *EDF R&D - LNHE*
11:10	Application of the new turbo-machinery module in *Code_Saturne* to the study of a mixed flow compressor and co-visualization	S. Rolfo / B. Lorendeau *Daresbury Lab.- UK*
11:40	CFD simulations of the JULIETTE 1/5th-scale PWR model for external boron dilution studies with *Code_Saturne* V3.0	F. Lelong *EDF SEPTEN and R&D*

- EDF R&D support

Access to the **source** and **validation** repositories

```
git svn clone https://noeyy727.noe.edf.fr/mfee/saturne/trunk
```

User presentations of the **morning**

9:05	Invited Lecture	D. Banner *Head of simulation program*
9:20	Latest news and prospects in *Code_Saturne* from 3.0 to 3.3	Y. Fournier *EDF R&D - MFEE*
9:40	CFD activities at EDF China R&D center – focus on the support to local thermal plants	J. Min *EDF China R&D center*
10:00	CFD activities at EDF UK R&D centre	J. Uribe *EDF R&D UK centre*
10:50	Nuclear production optimization under severe winter conditions	C. Peyrard *EDF R&D - LNHE*
11:10	Application of the new turbo-machinery module in *Code_Saturne* to the study of a mixed flow compressor and co-visualization	S. Rolfo / B. Lorendeau *Daresbury Lab.- UK*
11:40	CFD simulations of the JULIETTE 1/5th-scale PWR model for external boron dilution studies with *Code_Saturne* V3.0	F. Lelong *EDF SEPTEN and R&D*

- **EDF R&D support**

Access to the **source** and **validation** repositories

```
git svn clone https://noeyy727.noe.edf.fr/mfee/saturne-vnv/trunk
```

User presentations of the **morning**

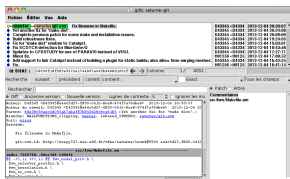|		
9:05	Invited Lecture	D. Banner *Head of simulation program*
9:20	Latest news and prospects in *Code_Saturne* from 3.0 to 3.3	Y. Fournier *EDF R&D - MFEE*
9:40	CFD activities at EDF China R&D center – focus on the support to local thermal plants	J. Min *EDF China R&D center*
10:00	CFD activities at EDF UK R&D centre	J. Uribe *EDF R&D UK centre*
10:50	Nuclear production optimization under severe winter conditions	C. Peyrard *EDF R&D - LNHE*
11:10	Application of the new turbo-machinery module in *Code_Saturne* to the study of a mixed flow compressor and co-visualization	S. Rolfo / B. Lorendeau *Daresbury Lab.- UK*
11:40	CFD simulations of the JULIETTE 1/5th-scale PWR model for external boron dilution studies with *Code_Saturne* V3.0	F. Lelong *EDF SEPTEN and R&D*

```
git svn clone http://code-saturne.org/svn/saturne/trunk
```

- Open source

www.code-saturne.org

Access to the **source** repositories

User presentations of the **afternoon**

13:40	Three canonical flows, one geometry: Study of the turbulent flow structure in an annular space with inter-rod gapping	K. Newlands *Uni. Of Aberdeen - UK*
14:00	Lagrangian modeling of pulverized coal combustion - a post-processing approach	M. Charwath *EDF R&D - MFEE*
14:20	An overview of existing and future atmospheric simulations with *Code_Saturne*	B. Carissimo *EDF R&D- MFEE*
14:40	Break - Poster session	
15:30	Turbo-machinery computations with Lagrangian particle tracking: developments and validation	B. de Laage de Meux / T. Pasutto *EDF R&D - MFEE*
15:50	Recent developments in *Code_Saturne* for the simulation of lightning direct effects	L. Chemartin *ON-ERA*
16:10	Development and Use of *Code_Saturne* at Renuda	N. Tonello *RENUDA*
16:30	Closure	F. Baron *Head of MFEE department*

User presentations of the **afternoon**

- EDF R&D support

code-saturne.org/cms/

bug-tracker-access

New physical features
from the applicative
projects

Time	Title	Author
13:40	Three canonical flows, one geometry: Study of the turbulent flow structure in an annular space with inter-rod gapping	K. Newlands *Uni. Of Aberdeen - UK*
14:00	Lagrangian modeling of pulverized coal combustion - a post-processing approach	M. Charwath *EDF R&D - MFEE*
14:20	An overview of existing and future atmospheric simulations with *Code_Saturne*	B. Carissimo *EDF R&D- MFEE*
14:40	Break - Poster session	
15:30	Turbo-machinery computations with Lagrangian particle tracking: developments and validation	B. de Laage de Meux / T. Pasutto *EDF R&D - MFEE*
15:50	Recent developments in *Code_Saturne* for the simulation of lightning direct effects	L. Chemartin *ON-ERA*
16:10	Development and Use of *Code_Saturne* at Renuda	N. Tonello *RENUDA*
16:30	Closure	F. Baron *Head of MFEE department*

User presentations of the **afternoon**

- ■ Open source

- ■ $\simeq$ 1000 Dl / month
- ■ 40 bugs fixed / year

| 13:40	Three canonical flows, one geometry: Study of the turbulent flow structure in an annular space with inter-rod gapping	K. Newlands *Uni. Of Aberdeen - UK*
14:00	Lagrangian modeling of pulverized coal combustion - a post-processing approach	M. Charwath *EDF R&D - MFEE*
14:20	An overview of existing and future atmospheric simulations with *Code_Saturne*	B. Carissimo *EDF R&D- MFEE*
14:40	Break - Poster session	
15:30	Turbo-machinery computations with Lagrangian particle tracking: developments and validation	B. de Laage de Meux / T. Pasutto *EDF R&D - MFEE*
15:50	Recent developments in *Code_Saturne* for the simulation of lightning direct effects	L. Chemartin *ON-ERA*
16:10	Development and Use of *Code_Saturne* at Renuda	N. Tonello *RENUDA*
16:30	Closure	F. Baron *Head of MFEE department*

User presentations of the **afternoon**

- ■ Open source

www.code-saturne.org

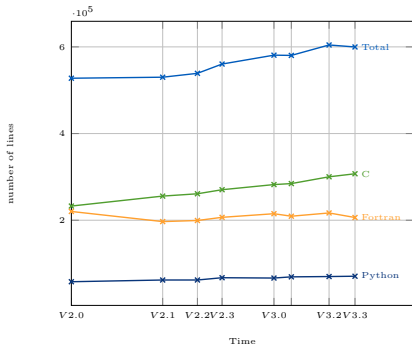| 13:40	Three canonical flows, one geometry: Study of the turbulent flow structure in an annular space with inter-rod gapping	K. Newlands *Uni. Of Aberdeen - UK*
14:00	Lagrangian modeling of pulverized coal combustion - a post-processing approach	M. Charwath *EDF R&D - MFEE*
14:20	An overview of existing and future atmospheric simulations with *Code_Saturne*	B. Carissimo *EDF R&D- MFEE*
14:40	Break - Poster session	
15:30	Turbo-machinery computations with Lagrangian particle tracking: developments and validation	B. de Laage de Meux / T. Pasutto *EDF R&D - MFEE*
15:50	Recent developments in *Code_Saturne* for the simulation of lightning direct effects	L. Chemartin *ON-ERA*
16:10	Development and Use of *Code_Saturne* at Renuda	N. Tonello *RENUDA*
16:30	Closure	F. Baron *Head of MFEE department*

A little bit of history, on the road to 4.0
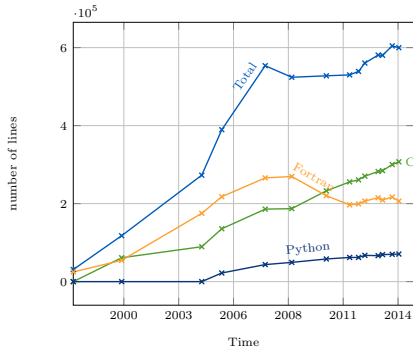
Verification and Validation

V4.0 distributed through the **SALOME_CFD** platform

A little bit of history, on the road to 4.0

Verification and Validation

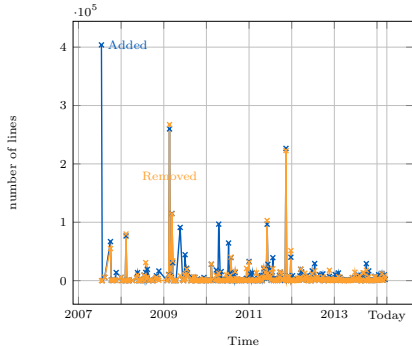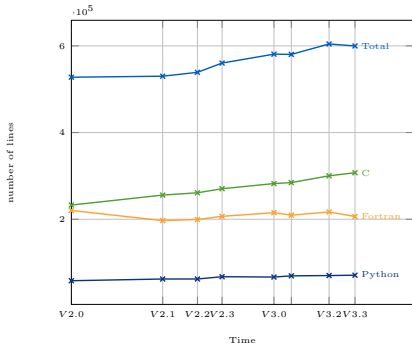V4.0 distributed through the
SALOME_CFD platform

A little bit of history, on the road to 4.0
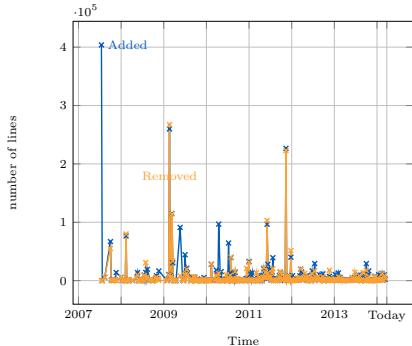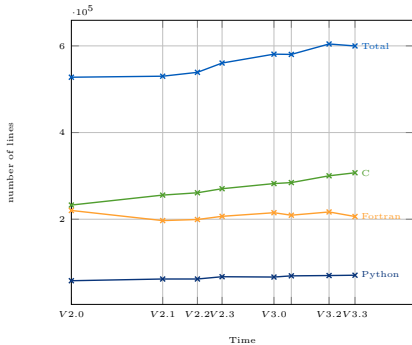
Verification and Validation

$V4.0$ distributed through the **SALOME_CFD** platform
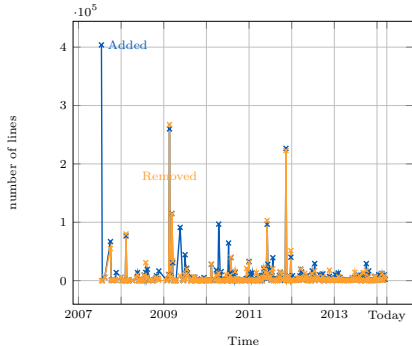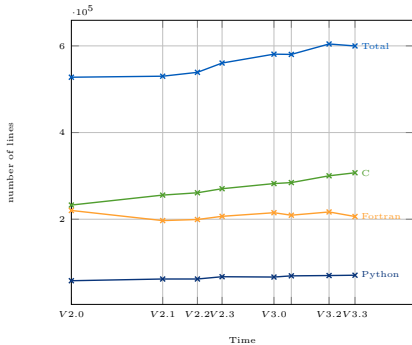
A little bit of history, on the road to 4.0

Verification and Validation

V4.0 distributed through the
SALOME_CFD platform

A little bit of history, on the road to 4.0

Verification and Validation

*V*4.0 distributed through the **SALOME_CFD** platform

Thank you for your attention...