Federico Roman
Curriculum Vitae

PERSONAL

Date of birth: May 26, 1976.
Place of birth: Oderzo (TV), Italy.
Citizenship: Italian.

ADDRESS & CONTACTS

Via Del Donatello 14, 34128, Trieste, Italy.
Work e-mail: f.roman@iefluids.com
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CURRENT EMPLOY
2014-present   CEO - R&D at IEFLUIDS s.r.l., spin-off University of Trieste, Italy.

PAST EMPLOY
2009 – 2013   Research fellowship at University of Trieste, Italy.

EDUCATION
April 2009   Ph.D. in environmental and industrial fluid mechanics at University of Trieste, thesis: "A Large Eddy Simulation tool for environmental and industrial processes".
March 2005   Dr. Civil Engineering, Università degli Studi di Trieste,Trieste, Italy. Thesis: "Precipitazioni piovose in Friuli Venezia Giulia, evoluzione storica e cambiamento climatico", advisor Prof. E. Caroni.

ADVANCED SCHOOLS
11-15 February 2013   9th Advanced school on parallel computing, Casalecchio di Reno (Bo), Italy.
24-26 November 2009   Tools for development and management of scientific project, Rome, Italy.
5-7 September 2007   Advanced school on lagrangian techniques in multiphase flow, Trieste, Italy.
4-15 July 2005   14° summer school on parallel computing, Casalecchio di Reno (Bo), Italy.

ADDITIONAL COURSES
Università degli Studi di Trieste: Advanced Mathematical Methods, Elements of Statistic, Fluid Mechanics I, Fluid Mechanics II, Numerical Methods, Computational Fluid Dynamics.
International Centre for Theoretical Physics ICTP: Instability and Turbulence.
Istituto Nazionale di Oceanografia e di Geofisica OGS: Geophysical Fluid Mechanics, Physical Oceanography.
ARPA FVG: Physic of Atmosphere.

AWARDS
Winner of "Progetto giovani ricercatori 2007", Università degli studi di Trieste.

LANGUAGE
Italian, English.

RESEARCH INTERESTS
- Large Eddy Simulations
- Numerical modelling for wall function
- Numerical modelling for turbulence
- Immersed Boundary Method
- Nesting procedures
- Numerical modelling for oil spill problem
- Numerical modelling for wind-turbine
- Pollutant dispersion in sea coastal areas and harbours
- Pollutant dispersion in urban environment
- Windfarm analysis

ACTIVITIES
- April – May 2011 Barcelona (Spain): collaboration with LIM to study the mixing and circulation in Barcelona's harbour.
- July 2010 / July – August, 2009 / June – August, 2008 San Diego (USA): collaboration with Prof. S. Sarkar (Mechanical and Aerospace Engineering, University of California San Diego) for LES modeling in case of high separation and stratification.
- September 2008, Trieste (Italy): support to the organization of DLES7 workshop.
- February 2008 / February-March 2007 , Dresden (Germany): collaboration with Prof. J. Froelich (Technical University of Dresden) to work on a wall model with an immersed boundary method.
- September 2007, Trieste (Italy): support to the organization of "Advanced School on Lagrangian Techniques in Multiphase Flow".
- April 2006, Palermo (Italy): collaboration with Prof. E. Napoli (Università di Palermo) to work on an "Immersed Boundary Method" for curvilinear grids.

PROJECT MANAGER EXPERIENCES

LUNES – sviluppo di applicazioni per l'analisi della diffusione degli inquinanti alla scala urbana di quartiere
PERIOD: 01/08/2016 – 30/06/2018
PARTNERS: IEFLUIDS S.r.l., SIDERURGICA TRIESTINA S.P.A., UNIVERSITA' DEGLI STUDI DI TRIESTE
FUNDS: Regione Friuli Venezia Giulia POR-FESR 2014-2020

PRELICA – metodologie avanzate per la progettazione idroacustica dell'elica navale
PERIOD: 01/05/2017 – 31/01/2019
PARTNERS: IEFLUIDS S.r.l., ENGYS S.R.L., CETENA S.P.A., UNIVERSITA' DEGLI STUDI DI TRIESTE, SISSA
FUNDS: Regione Friuli Venezia Giulia POR-FESR 2014-2020

MULTIPHASEEULERQUENCH – tool di simulazione numerica dei processi di tempra degli acciai
PERIOD: 01/11/2016 – 31/03/2018
PARTNERS: IEFLUIDS S.R.L., UNIVERSITA' DEGLI STUDI DI TRIESTE
FUNDS: Regione Friuli Venezia Giulia PAR-FSC 2007-2013

KEP ACTIVITY – preserving Kotor bay as natural and historical heritage – analyzing sea pollution sources and raising ecological awareness
PERIOD: 01/02/2016 – 31/01/2017
PARTNERS: IEFLUIDS S.R.L., OCEAN MONTENEGRO D.O.O., TARGET D.O.O.
FUNDS: CEI – CENTRAL EUROPEAN INITIATIVE FUND

COSMO – cfd open source per opera morta
PERIOD: 01/07/2014-30/06/2017
PARTNERS: IEFLUIDS S.R.L., CETENA S.P.A., UNIVERSITA' DEGLI STUDI DI TRIESTE
FUNDS: Regione Friuli Venezia Giulia PAR-FSC 2007-2013

LESWIND – sviluppo di modellistica avanzata per la valutazione dell'efficienza dei parchi eolici
PERIOD: 01/11/2013 – 30/09/2015
PARTNERS: IEFLUIDS S.R.L., UNIVERSITA' DEGLI STUDI DI TRIESTE
FUNDS: Regione Friuli Venezia Giulia PAR-FSC 2007-2013

PUBLICATION LIST

INTERNATIONAL JOURNAL

-Kyrousi, F., Leonardi, A., Roman, F., Armenio, V., Zanello, F., Zordan, J., Juez, C., Falcomer, L. "Large Eddy Simulations of sediment entrainment induced by a lock-exchange gravity current". Advances in Water Resources, 2018, vol 114, p. 102-118.

-Ottolenghi, L., Adduce, C., Roman, F., Armenio, V., "Analysis of the flow in gravity currents propagating up a slope". Ocean Modelling, 2017, vol 115, pages 1-13.

-Ottolenghi, L., Adduce, C., Inghilesi, R., Roman, F., Armenio, V., "Entrainment and mixing in unsteady gravity currents". Journal of Hydraulic Research, 2016, vol 54, issue 5, pages 541-557.

-Ottolenghi, L., Adduce, C., Inghilesi, R., Roman, F., Armenio, V., "Mixing in lock-release gravity currents propagating up a slope". Physics of Fluids, 2016, vol 8, issue 5, 056604.

-Petronio A., Roman, F., Armenio, V., Stel, F., Giaiotti, D., "Large eddy simulations model for urban areas with thermal and humid stratification effects". ERCOFTAC series 2015, vol 20, pages 443-449.

-Galea, A., Grifoll, M., Roman, F., Mestress, M., Armenio, V., Sanchez-Arcilla, A., Zammit Mangion, L., "Numerical simulation of water mixing and renewals in the Barcelona Harbour area: the winter season". Environmental Fluid Mechanics, 2014, Vol. 14 Issue 6, pages 1405-1425.

-Petronio, A., Roman, F., Nasello, C., Armenio, V., "Large-Eddy Simulation model for wind driven sea circulation in coastal areas". Nonlin. Processes Geophys., 2013, Vol. 20, pages 1095-1112.

-Roman, F., Sarkar, S., Armenio, V., "Large eddy simulation of a neutral and stratified flow in a plane asymmetric diffuser". ERCOFTAC series 2011. Vol 15, pages 257-262.

-Roman, F., Stipcich, G., Armenio, V., Inghilesi, R., Corsini, S., "Large Eddy Simulations of mixing in coastal areas". International Journal of Heat and Fluid Flows, 2010, Vol. 31, pages 327-341.

-Roman, F., Armenio, V., Inghilesi, R., Corsini, S., "Large eddy simulation of turbulent mixing in an estuary region". ERCOFTAC series, vol 13, 463-468.

-Roman, F., Armenio, V., Froelich, J., "A simple wall layer model for LES with IBM". Physics of Fluids, 2009, 21, 101701.

-Roman, F., Napoli, E., Milici, B., Armenio, V., "An improved Immersed Boundary Method for curvilinear grids". Computers & Fluids, 2009, Vol. 38, pages 1510-1527.

-Armenio, V., Roman, F., "Large Eddy Simulation of environmental shallow water coastal flow". Ercoftac Bulletin, 2009, 78, pages 46-53.

-Inghilesi, R., Stocca, V., Roman, F., Armenio, V., "Disperison of a vertical jet of buoyant particles in a stably stratified wind-driven Ekman layer". International Journal of Heat and Fluid Flows, 2008, Vol. 29, Issue 3, pages 733-742.

CONFERENCE

-Ottolenghi, L., Adduce, C., Inghilesi, R., Roman, F., Armenio, V., "LES investigation on entrainment in gravity currents". Proc. River Flow – the international conference on fluvial hydraulics, 2016.

-Ottolenghi, L., Adduce, C., Inghilesi, R., Roman, F., Armenio, V., "density currents flowing up a slope". IAHR 2016.

-Ottolenghi, L., Adduce, C., Inghilesi, R., Roman, F., Armenio, V., "Analisi dei processi di mescolamento in una corrente di gravità mediante esperimenti di laboratorio e simulazioni LES". IDRA14, Bari (Italy), 7-10 September 2014.

-Ottolenghi, L., Adduce, C., Inghilesi, R., Roman, F., Armenio, V., "Large Eddy Simulation of gravity currents moving on up-sloping boundaries". River Flow, Lausanne (Switzerland), 3-5 September 2014.

-Zanier, G., Petronio, A., Roman, F., Armenio, V., "High resolution oil spill model for harbour and coastal areas". 3rd IAHR Europe Congress, Porto (Portugal), 14-16 April 2014.

-Ottolenghi, L., Adduce, C., Inghilesi, R., Roman, F., Armenio, V., "Gravity currents moving on up-sloping boundaries". ERCOFTAC SIG5, Cambridge (England), 24-25 September 2013.

-Roman, F., Petronio, A., Armenio, V., "un modello numerico ad altissima risoluzione per la dispersione degli inquinanti in ambiente costiero". AIQUA2013, Napoli (Italia) 18-21 Giugno 2013.

-Petronio, A., Roman, F., Armenio, V., Stel, F., Giaiotti, D., "Large eddy simulation model for urban areas with thermal and humid stratification effects". Proc. Direct and Large Eddy Simulation 9, Dresden (Germany), 3-5 April 2013.

-Galea, A., Grifoll, M., Roman, F., Mestres, M., Armenio, V., Sanchez-Arcilla, A., "Numerical Simulation of water mixing and renewal in the Barcelona harbour area". Coastlab 12, Ghent (Belgium), 17-20 September 2012.

-Roman, F., Inghilesi, R., Armenio, V., "Three-dimensional, non-hydrostatic and barocline numerical prediction of Tiber river runoff in the tyrrhenian sea". 7th International Symposium on Stratified Flow, Rome (Italy), 22-26 August 2011.

-Siena, M., Roman, F., Armenio, V., "High resolution simulations of turbulent mixing in the Muggia bay". Coastlab 10, Barcelona (Spain), 28-30 September & 1 October 2010.

-Roman, F., Armenio, V., Siena, M., "Mescolamento delle acque nella baia di Muggia sotto diverse forzanti meteorologiche: il caso invernale". XXXII Convegno Nazionale di Idraulica, Palermo (Italy), 14-17 September 2010.

-Roman, F., Sarkar, S., Armenio, V., "Large Eddy Simulation of a neutral and a stratified flow in a plane asymmetric diffuser". Proc. Direct and Large Eddy Simulation 8, Eindhoven (the Netherlands), 7-9 July 2010.

-Roman, F., Armenio, V., "Large Eddy Simulation of mixing in coastal area". Euromech Colloquium 519: Mixing and dispersion in flows dominated by rotation and buoyancy, Rolduc (the Netherlands), 21-23 June 2010.

-Roman, F., Armenio, V., Froelich, J., "A wall model for Large Eddy Simulation with an immersed boundary method". Immersed Boundary Methods: Current status and future research, Amsterdam (the Netherlands), 15-17 June 2009.

-Roman, F., Stipcich, G., Armenio, V., Inghilesi, R., Corsini, S., "Large Eddy Simulation of mixing in coastal areas". Proc. Turbulent Shear Flow Phenomena 6, Seoul (South Korea), 22-24 June 2009.

-Armenio, V., Roman, F., "LES of mixing in coastal areas". American Physical society meeting, San Antonio (U.S.A.), 23-25 November 2008.

-Roman, F., Armenio, V., Inghilesi, R., Corsini, S., "Large Eddy Simulation of turbulent mixing in an estuary region". Proc. Direct and Large Eddy Simulation 7, Trieste (Italy), 5-7 September 2008.

-Inghilesi, R., Stocca, V., Roman, F., Armenio, V., "Dispersion of a vertical jet of buoyant particles in a stably stratified wind-driven Ekman layer". Proc. Turbulence and Shear Flow Phenomena 5, TU Munich (Germany), 27-29 August 2007.

-Milici, B., Roman, F., Napoli, E., Armenio, V., "An improved Immersed Boundary Method for complex geometry in environmental flows". Proc. 32° Congress of IAHR, Venice (Italy), July 1-6 2007.

Trieste (Italy),
22 May, 2018
Federico Roman