

A vortex ring model and its applications

Kaplanski, Felix Abstract: <http://www2.math.kyushu-u.ac.jp/~masato/npa-old/index.html> : Seminar on Nonlinear Phenomena and Analysis, Kyushu University, Fukuoka, Japan, 28 January 2010

Confined vortex rings

Danaila, Ionut; **Kaplanski, Felix**; Sazhin, Sergei Vortex Ring Models 2021 / p. 103 - 119 https://doi.org/10.1007/978-3-030-68150-0_5
[Article collection metrics at Scopus](#) [Article at Scopus](#)

Contribution of atmospheric teleconnections in regional wave climate variability based on EOF application : Baltic Sea case

Najafzadeh, Fatemeh; **Kudryavtseva, Nadezhda**; **Soomere, Tarmo** American Geophysical Union, Fall Meeting 2020 2020 / abstract <https://ui.adsabs.harvard.edu/#abs/2020AGUFMOS0470002N/abstract>

Dense gravity currents in rotating, up-sloping and converging channel

Cuthbertson, Alan; Davies, Peter; **Laanearu, Janek**; Wahlin, Anna Proceedings of VII International Symposium on Stratified Flows (ISSF2011), 22nd-26th of August, Rome, Italy 2011
https://www.researchgate.net/publication/283792789_Dense_Gravity_Currents_in_a_Rotating_Up-sloping_Converging_Channel

Eddy formation behind a coastal cape in a flow generated by transient longshore wind (Numerical experiments)

Zhurbas, Victor; Kuzmina, N.P.; Lyzhkov, D.A. Oceanology 2017 / p. 350-359 : ill <https://doi.org/10.1134/S0001437017020229> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Eddy-driven flows over varying bottom topography in natural water bodies

Heinloo, Jaak Proceedings of the Estonian Academy of Sciences. Physics. Mathematics 2006 / 4, p. 235-245 : ill

Estimates of the lateral eddy diffusivity in the Indian Ocean as derived from drifter data

Zhurbas, Victor; Lyzhkov, D.A.; Kuzmina, N.P. Oceanology 2014 / p. 281-288 : ill <https://doi.org/10.1134/S0001437014030163> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Formation number of vortex rings

Danaila, Ionut; **Kaplanski, Felix**; Sazhin, Sergei Vortex Ring Models 2021 / p. 121-139 https://doi.org/10.1007/978-3-030-68150-0_6
[Article collection metrics at Scopus](#) [Article at Scopus](#)

A generalized vortex ring model

Kaplanski, Felix; Sazhin, Sergei; Fukumoto, Yasuhide; Begg, Steven; Heikal, Morgan Journal of fluid mechanics 2009 / p. 233-258

Impact of coastal currents and eddies on particle dispersion in the Baltic Sea: a Lagrangian approach to marine ecosystems

Hariri, Saeed; **Väli, Germa**; **Meier, H. E. Markus** Frontiers in marine science 2025 / 12 p <https://doi.org/10.3389/fmars.2025.1545035>
<https://www.frontiersin.org/journals/marine-science/articles/10.3389/fmars.2025.1545035/full>

Jet and vortex ring-like structures in internal combustion engines : stability analysis and analytical solutions

Sazhin, Sergei; Boronin, S.; **Kaplanski, Felix** Procedia IUTAM 2013 / p. 196-204

Jets and vortex ring-like structures in internal combustion engines : stability analysis and analytical solutions

Sazhin, Sergei; Boronin, S.; Begg, Steven; Crua, C.; Heikal, Morgan; Healey, J.; Lebedeva, N.; Osipov, A.; **Kaplanski, Felix** IUTAM Symposium 12–3=GA.10-08 "Waves in fluids : Effects of Non-Linearity, Rotation, Stratification and Dissipation" Moscow, June 18-22, 2012 programme 2012 / [3] p <https://www.sciencedirect.com/science/article/pii/S2210983813000989>

A model for confined vortex rings with elliptical-core vorticity distribution

Danaila, Ionut; **Kaplanski, Felix**; Sazhin, Sergei Journal of fluid mechanics 2017 / p. 67-94 : ill <https://doi.org/10.1017/jfm.2016.752>
[Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

A Model for the formation of "optimal" vortex rings taking into account viscosity

Kaplanski, Felix; Rudi, Ülo Physics of fluids 2005 / 8, [7] p <https://pubs.aip.org/aip/pof/article/17/8/087101/361381/A-model-for-the-formation-of-optimal-vortex-rings>

A model for the formation of "optimal" vortex rings with taking into account viscosity

Kaplanski, Felix; Rudi, Ülo 21st International Congress of Theoretical and Applied Mechanics : August 15-21, 2004, Warsaw, Poland : ICTAM04 : abstracts and CD-ROM proceedings 2004 / p. 189 <https://pubs.aip.org/aip/pof/article/17/8/087101/361381/A-model-for-the-formation-of-optimal-vortex-rings>

Model for the formation of "optimal" vortex rings with taking into account viscosity [Electronic resource]

Kaplanski, Felix; Rudi, Ülo Proceedings of the 21st IUTAM Congress : Warsaw, Poland 2005 / p. FM25 [CD-ROM]
https://www.researchgate.net/publication/278242738_A_model_for_the_formation_of_optimal_vortex_rings_with_taking_into_account_viscosity

Modeling of a turbulent vortex ring

Kaplanski, Felix; Rudi, Ülo Advances in turbulence XI: proceedings of the 11th EUROMECH European Turbulence Conference : June 25-28, 2007, Porto, Portugal 2007 / p. 304-306
https://www.researchgate.net/publication/251249595_Modeling_of_a_turbulent_vortex_ring

Modeling of a vortex ring flow

Fukumoto, Y.; **Kaplanski, Felix** Reports of RIAM Symposium No. 18ME-S7 2007 / p. 112-118

Modeling of a vortex ring flow at high Reynolds number

Kaplanski, Felix; Fukumoto, Y.; Sazhin, Sergei UK-Israel Workshop "Sprays : Modelling versus Experimentation" : Brighton, UK, July 16-18, 2007 2007 / ? p

Modelling of a two-phase vortex-ring flow using an analytical solution for the carrier phase

Rybdylova, O.; Sazhin, S.S.; Osipov, A.N.; **Kaplanski, Felix; Begg, S.; Heikal, M.** Applied mathematics and computation 2018 / 11 p. : ill <https://doi.org/10.1016/j.amc.2017.12.044> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Modelling of confined vortex rings

Danaila, Ionut; **Kaplanski, Felix; Sazhin, Sergei** Journal of fluid mechanics 2015 / p. 267-297 : ill <https://doi.org/10.1017/jfm.2015.261> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Particle dynamics and mixing in an oscillating viscous vortex pair

Kaplanski, Felix; Sazhin, Sergei; Rudi, Ülo Proceedings of the Estonian Academy of Sciences. Engineering 2005 / 2, p. 140-153 : ill https://kirj.ee/wp-content/plugins/kirj/pub/eng-2-2005-140-153_20211119120244.pdf

Particle dynamics in a vortex ring [Electronic resource]

Kaplanski, Felix; Rudi, Ülo Proceedings of the 5th International Conference on Multiphase Flow : ICMF-2004 : Yokohama, Japan, May 30-June 4, 2004 2004 / Paper No. 571. [CD-ROM]
https://www.researchgate.net/publication/278242733_Particle_dynamics_in_a_vortex_ring

Particle dynamics in a vortex ring [Electronic resource]

Kaplanski, Felix; Sashin, S.; Rudi, Ülo Proceedings of the 3rd International Symposium on Two-Phase Flow Modelling and Experimentation : ISTP-2004 : Pisa, Italy, September 22-26, 2004 2004 / paper No. as05 (6 p.). [CD-ROM]
https://www.researchgate.net/publication/278242733_Particle_dynamics_in_a_vortex_ring

Particle motion in the vortices generated by a localized force

Kaplanski, Felix; Rudi, Ülo; Tisler, Sergei Chemical and process engineering 2005 / 3, p. 427-436
<https://yadda.icm.edu.pl/baztech/element/bwmeta1.element.baztech-article-BGPK-1183-5137>

Preface

Danaila, Ionut; **Kaplanski, Felix; Sazhin, Sergei** Vortex Ring Models 2021 / p. vii <https://link.springer.com/content/pdf/bfm:978-3-030-68150-0/1?pdf=chapter%20toc> [Article collection metrics at Scopus](#) [Article at Scopus](#)

Quantification and characterization of mesoscale eddies with different automatic identification algorithms

Viikmäe, Bert; Torsvik, Tomas Journal of coastal research 2013 / p. 2077-2082 : ill <https://doi.org/10.2112/SI65-351> [Conference Proceedings at Scopus](#) [Article at Scopus](#) [Conference Proceedings at WOS](#) [Article at WOS](#)

Reynolds-number effect on vortex ring evolution

Kaplanski, Felix; Fukumoto, Y.; Rudi, Ülo Recent Progresses in Fluid Dynamics Research : proceedings of the Sixth International Conference on Fluid Mechanics, 30 June - 3 July, 2011, Guangzhou, China 2011 / p. 57-60 : ill https://www.researchgate.net/publication/234946883_Reynolds-number_Effect_on_Vortex_Ring_Evolution

Reynolds-number effect on vortex ring evolution in a viscous fluid

Kaplanski, Felix; Fukumoto, Yasuhide; Rudi, Ülo Physics of fluids 2012 / p. 033101-1 - 033101-13
https://www.researchgate.net/publication/234946883_Reynolds-number_Effect_on_Vortex_Ring_Evolution

Seasonality of submesoscale coherent vortices in the Northern Baltic Proper : a model study

Väli, Gerardo; Zhurbas, Victor Фундаментальная и прикладная гидрофизика 2021 / p. 122-129
<https://doi.org/10.7868/S2073667321030114> [Journal metrics at Scopus](#) [Article at Scopus](#)

Steady inviscid vortex rings

Danaila, Ionut; **Kaplanski, Felix; Sazhin, Sergei** Vortex Ring Models 2021 / p. 17-49 https://doi.org/10.1007/978-3-030-68150-0_2 [Article collection metrics at Scopus](#) [Article at Scopus](#)

Time-dependent properties of a viscous vortex ring

Kaplanski, Felix; Rudi, Ülo Proceedings of the Estonian Academy of Sciences. Engineering 1997 / 3, p. 171-184

Transport processes in an oscillating vortex pair and rings

Kaplanski, Felix; Rudi, Ülo NATO Advanced Study Institute Flow and Transport Processes in Complex Obstructed Geometries : from Cities and Vegetative Canopies to Industrial Problems : Kyiv, Ukraine, May 4-12, 2004 2004 / p. 110-112

Viscous vortex rings

Danaila, Ionut; **Kaplanski, Felix**; Sazhin, Sergei Vortex Ring Models 2021 / p. 51-86 https://doi.org/10.1007/978-3-030-68150-0_3
[Article collection metrics at Scopus](#) [Article at Scopus](#)

Viscous vortex rings with elliptical cores

Danaila, Ionut; **Kaplanski, Felix**; Sazhin, Sergei Vortex Ring Models 2021 / p. 87 - 102 https://doi.org/10.1007/978-3-030-68150-0_4
[Article collection metrics at Scopus](#) [Article at Scopus](#)

The vortex ring problem

Danaila, Ionut; **Kaplanski, Felix**; Sazhin, Sergei Vortex Ring Models 2021 / p. 1-15 https://doi.org/10.1007/978-3-030-68150-0_1 [Article collection metrics at Scopus](#) [Article at Scopus](#)

Vortex ring-like structures in gasoline fuel sprays : modelling and observations [Electronic resource]

Sazhin, Sergei; **Kaplanski, Felix**; Begg, Steven; Heikal, Morgan ILASS 2008 : 22nd European Conference on Liquid Atomization and Spray Systems : September 8-10, 2008, Como Lake, Italy 2008 / p. paper 6-5 [CD-ROM]
https://www.researchgate.net/publication/278242920_Vortex_ring-like_structures_in_gasoline_fuel_sprays_modelling_and_observations

Vortex rings in a viscous fluid : asymptotic theory and numerical simulations

Kaplanski, Felix; Fukumoto, Yasuhide; Sazhin, Sergei EUROMECH Fluid Mechanics Conference 7 : University of Manchester, 14-18 September 2008 : abstracts 2008 / p. 169 : ill https://www.researchgate.net/profile/Felix-Kaplanski/publication/278299986_Vortex_rings_in_a_viscous_fluid_Asymptotic_theory_and_numerical_simulations/links/557e835008aeb61eae248274/Vortex-rings-in-a-viscous-fluid-Asymptotic-theory-and-numerical-simulations.pdf

Vortex rings in internal combustion engines : modelling versus experiment

Sazhin, Sergei; **Kaplanski, Felix**; Begg, Steven; Heikal, Morgan Proceedings of the 19th International Symposium on Transport Phenomena (ISTP-19) : Reykjavik, Iceland, August 17-20, 2008 2008 / p. 133-140 https://www.researchgate.net/profile/Felix-Kaplanski/publication/278242750_Vortex_rings_in_internal_combustion_engines_modelling_versus_experiment/links/557ed2e208aec87640ddea88/Vortex-rings-in-internal-combustion-engines-modelling-versus-experiment.pdf

Тангенциальные силы и крутящий момент в шариковинтовых передачах

Penkov, Igor Машиностроение и электротехника = Machinebuilding and electrical engineering 2006 / 7/8, с. 62-64 : ил