

List of publications, Jonas Nycander

- Invited review article
 1. Nycander, J., 1994. Steady vortices in plasmas and geophysical flows. *Chaos* **4**, 253-267.
- Regular articles, plasma physics
 2. Nycander, J. and Wahlberg, C., 1984. Influence of the current profile on the growth rate of $m = 1$ kink modes in a pure z-pinch. *Nucl. Fusion* **24**, 1357-1360.
 3. Nycander, J., Pavlenko, V.P. and Revenchuk, S.M., 1986. Echo in a weakly turbulent plasma. *Fiz. Plazmy* **12**, 402-407 [*Soviet J. Plasma Phys.* **12**, 231].
 4. Nycander, J., Pavlenko, V.P. and Revenchuk, S.M., 1986. Echo in a magnetized weakly turbulent plasma. *Plasma Phys. Contr. Fusion* **28**, 1659-1673.
 5. Nycander, J., Pavlenko, V.P. and Revenchuk, S.M., 1986. Space-time echo in an unmagnetized weakly turbulent plasma. *Physica Scripta* **34**, 819-820.
 6. Nycander, J. and Taranov, V.B., 1987. Self-similar drift waves in two dimensions. *Phys. Lett. A* **119**, 351-353.
 7. Nycander, J., Pavlenko, V.P. and Stenflo, L., 1987. Magnetic vortices in nonuniform plasmas. *Phys. Fluids* **30**, 1367-1370.
 8. Nycander, J. and Pavlenko, V.P., 1987. Global vortex pattern in a rotating plasma. *Phys. Fluids* **30**, 2097-2100.
 9. Nycander, J., 1989. The effect of the electron temperature gradient on nonlinear drift waves in plasmas. *Physica Scripta* **39**, 758-763.

10. Nycander, J. and Pavlenko, V.P., 1991. Localized flute vortices in plasmas. *Physica Scripta* **43**, 95-99.
11. Nycander, J., 1991. Stationary drift vortices with large amplitude. *Phys. Fluids B* **3**, 931-937.
12. Nycander, J. and Pavlenko, V.P., 1991. Stationary propagating magnetic electron vortices. *Phys. Fluids B* **3**, 1386-1391.
13. Nycander, J., 1991. Comment on 'Dipole and Monopole Vortices in Nonlinear Drift Waves'. *Phys. Rev. Lett.* **67**, 1671.
14. Nycander, J., Lynov, J.P. and Rasmussen, J.J., 1993. Localized vortices in eta-i modes. *Europhys. Lett.* **23**, 249-255.
15. Nycander, J. and Yankov, V.V., 1995. Anomalous pinch flux in tokamaks driven by the longitudinal adiabatic invariant. *Phys. Plasmas* **2**, 2874-2876.
16. Yankov, V.V. and Nycander, J., 1995. Comment on 'Invariant measure and turbulent pinch in tokamaks', *Phys. Rev. Lett.* **75**, 3582.
17. Åkerstedt, H.O., Nycander, J. and Pavlenko, V.P., 1996. Three-dimensional stability of drift vortices. *Phys. Plasmas* **3**, 160-167.
18. Nycander, J. and Yankov, V.V., 1996. Turbulent equipartition and up-gradient transport. *Physica Scripta* **T63**, 174-181.
19. Nycander, J. and Yankov, V.V., 1996. H-mode in tokamaks attributed to the absence of trapped ions in poloidally rotating plasma. *JETP Lett.* **63**, 448-452.
20. Yankov, V.V. and Nycander, J., 1997. Transport suppression by reversed magnetic shear. *Comments Plasma Phys. Contr. Fusion, Comments Mod. Phys.* **18**, 1-10.
21. Yankov, V.V. and Nycander, J., 1997. Description of turbulent transport in tokamaks by invariants. *Phys. Plasmas* **4**, 2907-2919.
22. Nycander, J. and Rasmussen, J.J., 1997. Pinch effect in two-dimensional turbulence. *Plasma Phys. Contr. Fusion* **39**, 1861-1869.
23. Naulin, V., Nycander, J. and Rasmussen, J.J., 1998. Equipartition and transport in two-dimensional electrostatic turbulence. *Phys. Rev. Lett.* **81**, 4148-4151.

24. Yankov, V.V. and Nycander, J., 2000. Sawtooth oscillations and collisionless reconnection in tokamaks. *Comments Plasma Phys. Contr. Fusion, Comments Mod. Phys.* **2**, Part C, 1-6.
 25. Yankov, V.V. and Nycander, J., 2000. Could Reversed Field Pinches and quasi-helical Stellarators benefit from transport suppression in tokamaks? *Plasma Phys. Rep.* **26**, 737-740.
 26. Naulin, V., Juul Rasmussen, J. and Nycander, J., 2003. Transport barriers and edge localized modes-like bursts in a plasma model with turbulent equipartition profiles. *Phys. Plasmas* **10**, 1075-1082.
- Peer-reviewed articles, oceanography and geophysical fluid dynamics
 27. Nycander, J., 1987. Propagation of discontinuities in the Hasegawa-Mima equation, *Phys. Fluids* **30**, 1585-1587
 28. Nycander, J., 1988. New stationary vortex solutions of the Hasegawa-Mima equation. *J. Plasma Phys.* **39**, 413-430.
 29. Nycander, J., 1989. The existence of stationary vortex solutions of the equations for nonlinear drift waves in plasmas and nonlinear Rossby waves. *Phys. Fluids B* **1**, 1788-1796.
 30. Nycander, J. and Isichenko, M.B., 1990. Motion of dipole vortices in a weakly inhomogeneous medium and related convective transport. *Phys. Fluids B* **2**, 2042-2047.
 31. Nycander, J. and Sutyrin, G.G., 1992. Steadily translating anticyclones on the beta plane. *Dyn. Atmos. Oceans* **16**, 473-498.
 32. Nycander, J., 1992. Refutation of stability proofs for dipole vortices. *Phys. Fluids A* **4**, 467-476.
 33. Hesthaven, J.S., Lynov, J.P. and Nycander, J., 1993. Dynamics of non-stationary dipole vortices. *Phys. Fluids A* **5**, 622-629.
 34. Nycander, J., Dritschel, D. and Sutyrin, G.G., 1993. The dynamics of long frontal waves in the shallow water equations. *Phys. Fluids A* **5**, 1089-1091.
 35. Nycander, J., 1993. Difference between monopole vortices in planetary flows and laboratory experiments. *J. Fluid Mech.* **254**, 561-577.

36. Aristov, S.N. and Nycander, J., 1994. Convective flow in baroclinic vortices. *J. Phys. Oceanogr.* **24**, 1841-1849.
37. Dritschel, D.G., Nycander, J. and Sutyrin, G.G. A Hamiltonian approach to the dynamics of long, frontal waves, in *Modelling of Oceanic Vortices* (ed. G.J.F. van Heijst), North Holland, Elsevier (1994), pp. 145-150.
38. Nycander, J., Dynamics of dipole vortices, in *Modelling of Oceanic Vortices* (ed. G.J.F. van Heijst), North Holland, Elsevier (1994), pp. 177-186.
39. Nycander, J., 1995. Existence and stability of stationary vortices in a uniform shear flow. *J. Fluid Mech.* **287**, 119-132.
40. Nycander, J., 1996. Analogy between the drift of planetary vortices and the precession of a spinning body. *Plasma Phys. Reports* **22**, 771-774.
41. Pakyari, A.R. and Nycander, J., 1996. Steady two-layer vortices on the beta-plane. *Dyn. Atmos. Oceans* **25**, 67-86.
42. Burton, G.R. and Nycander, J., 1999. Stationary vortices in three-dimensional quasigeostrophic shear flow. *J. Fluid Mech.* **389**, 255-274.
43. Nycander, J., 2001. Drift velocity of radiating quasigeostrophic vortices. *J. Phys. Oceanogr.* **31**, 2178-2185.
44. Nycander, J., Döös, K. and Coward, A.C., 2002. Chaotic and regular trajectories in the Antarctic Circumpolar Current. *Tellus* **54A**, 99-106.
45. Nycander, J. and Emamizadeh, B., 2003. Variational problem for vortices attached to seamounts. *Nonlinear Analysis* **55**, 15-24.
46. Nycander, J., 2003. Stable vortices as maximum or minimum energy flows, in: O.U. Velasco Fuentes, Julio Sheinbaum, José Luis Ochoa Torre (Eds.), *Nonlinear Processes in Geophysical Fluid Dynamics*, Kluwer, Dordrecht.
47. Nycander, J. and Döös, K., 2003. Open boundary conditions for barotropic waves. *J. Geophys. Res.* **108** (C5), 37.
48. Döös, K., Nycander, J. and Sigray, P., 2004. Slope dependent friction in a barotropic model. *J. Geophys. Res.* **109**, C01008, doi:10.1029/2002JC001517.

49. Nycander, J. and LaCasce, J.H., 2004. Stable and unstable vortices attached to seamounts. *J. Fluid Mech.* **507**, 71-94.
50. Benilov, E.S., Nycander, J. and Dritschel, D.G., 2004. Destabilisation of barotropic flows by small-scale topography. *J. Fluid Mech.* **517**, 359-374.
51. Marchal, O. and Nycander, J., 2004. Nonuniform upwelling in a shallow-water model in the Antarctic Bottom Water in the Brazil Basin. *J. Phys. Oceanogr.* **34**, 2492-2513.
52. Nycander, J., 2005. Generation of internal waves in the deep ocean by tides. *J. Geophys. Res.* **110**, C10028, doi:10.1029/2004JC002487.
53. Nycander, J., 2006. Tidal generation of internal waves from a periodic array of steep ridges. *J. Fluid Mech.* **567**, 415-432.
54. Bahrami, F. and Nycander, J., 2007. Existence of energy minimizing vortices attached to a flat-top seamount. *Nonlinear Analysis: Real World Applications* **8**, 288-294.
55. Nycander, J., Nilsson, J., Döös, K. and Broström, G., 2007. Thermodynamic analysis of ocean circulation. *J. Phys. Oceanogr.* **37**, 2038-2052.
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58. Nøst, O.A., Nilsson, J. and Nycander, J., 2008. On the asymmetry between cyclonic and anticyclonic flow in basins with sloping boundaries. *J. Phys. Oceanogr.* **38**, 771-787.
59. Döös, K., Nycander, J. and Coward, A.C., 2008. Lagrangian decomposition of the Deacon Cell. *J. Geophys. Res.* **113**, C07028, doi:10.1029/2007JC004351.

60. Nycander, J., Hogg, A.M. and Frankcombe, L.M., 2008. Open boundary conditions for nonlinear channel flow. *Ocean Modelling* **24**, 108–121.
61. Turnewitsch, R., Reyss, J.-L., Nycander, J., Waniek, J.J., and Lampitt, R.S., 2008. Internal tides and sediment dynamics in the deep sea - evidence from radioactive $^{234}\text{Th}/^{238}\text{U}$ disequilibria. *Deep-Sea Res. I.* **55**, 1727–1747.
62. Magnusson, L.E., Källén, E. and Nycander, J., 2008. Initial state perturbations in ensemble forecasting. *Nonlinear processes in Geophysics* **15**, 751–759.
63. Magnusson, L.E., Nycander, J. and Källén, E., 2009. Flow-dependent versus flow-independent initial perturbations for ensemble prediction. *Tellus* **61A**, 194–209.
64. Bahrami, F., Nycander, J. and Alikhani, R., 2010. Existence of energy maximizing vortices in a three-dimensional quasigeostrophic shear flow with bounded height. *Nonlinear Analysis: Real World Applications* **11**, 1589–1599.
65. Zarroug, M., Nycander, J. and Döös, K., 2010. Energetics of tidally-generated internal waves for nonuniform stratification. *Tellus* **62A**, 71–19.
66. Nycander, J., 2010. Horizontal convection with a nonlinear equation of state: generalization of a theorem of Paparella and Young. *Tellus* **62A**, 134–137.
67. Thompson, B., Nilsson, J., Nycander, J., Jakobsson, M. and Döös, K., 2010. The ventilation of Miocene Arctic ocean: an idealized model study. *Paleoceanography* **25**, PA4216, doi:10.1029/2009PA001883.
68. Nycander, J., 2011. Energy conversion, mixing energy and neutral surfaces with a nonlinear equation of state. *J. Phys. Oceanogr.* **41**, 28–41.