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Mechanisms for generating coherent packets of hairpin vortices in channel flow

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825	An explanation for the phase lag in supersonic jet impingement. <i>Journal of Fluid Mechanics</i> , <b>2017</b> , 815,	3-7	32
824	Fine structure of the production in low to medium Reynolds number wall turbulence. <b>2017</b> , 148, 82-102		3
823	The boundary-constraint method for constructing vortex-surface fields. <b>2017</b> , 339, 31-45		13
822	Dynamics of an unsteady stagnation vortical flow via dynamic mode decomposition analysis. <b>2017</b> , 58, 1		8
821	Self-sustaining processes at all scales in wall-bounded turbulent shear flows. <b>2017</b> , 375,		25
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819	An experimental study of the wall-pressure fluctuations beneath low Reynolds number turbulent boundary layers. <b>2017</b> , 141, 1257		9
818	Influence of vortical structure impingement on the oscillation and rotation of flat plates. <b>2017</b> , 70, 417-427		10
817	Investigation on the vortex-and-wake-induced vibration of a separated-box bridge girder. <b>2017</b> , 70, 145-161		18
816	Wake structures behind an oscillating bubble rising close to a vertical wall. <b>2017</b> , 91, 225-242		22
815	Effect of aorto-iliac bifurcation and iliac stenosis on flow dynamics in an abdominal aortic aneurysm. <b>2017</b> , 49, 035513		9

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813	Effects of blade rotation direction in the wake region of two in-line turbines using Large Eddy Simulation. <b>2017</b> , 197, 375-392		9
812	Influence of a large-eddy breakup device on the frictional drag in a turbulent boundary layer. <b>2017</b> , 29, 065103		16
811	Three-Dimensional Finite-Time Lyapunov Exponent Field in the Wake of an Oscillating Trapezoidal Pitching Panel. <b>2017</b> ,		1
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809	Coherent structures in statistically stationary homogeneous shear turbulence. <i>Journal of Fluid Mechanics</i> , <b>2017</b> , 816, 167-208	3-7	43
808	Multi-cored vortices support function of slotted wing tips of birds in gliding and flapping flight. <b>2017</b> , 14,		19
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806	The variation of large-scale structure inclination angles in high Reynolds number atmospheric surface layers. <b>2017</b> , 29, 035104		33
805	Resolving vorticity and dissipation in a turbulent boundary layer by tomographic PTV and VIC+. <b>2017</b> , 58, 1		23
804	Turbulent structures in an optimal Taylor-Couette flow between concentric counter-rotating cylinders. <b>2017</b> , 18, 480-496		6
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800	Optimal bursts in turbulent channel flow. <i>Journal of Fluid Mechanics</i> , <b>2017</b> , 817, 35-60	3-7	17
799	Proper orthogonal decomposition truncation method for data denoising and order reduction. <b>2017</b> , 58, 1		16
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797	Bubble-particle detachment in a turbulent vortex flow. <i>Computational methods</i> . <b>2017</b> , 102, 58-67		21



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795	Skin-friction drag reduction in turbulent channel flow based on streamwise shear control. <b>2017</b> , 63, 28-43		3
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793	Lateral Spreading Mechanism of a Turbulent Spot and a Turbulent Wedge. <b>2017</b> , 98, 21-35		11
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790	Asymmetric disturbance effect on the flow over a wavy cylinder at a subcritical Reynolds number. <b>2017</b> , 29, 095102		21
789	Study on Vortex Structures and Intermittency in Two-Oscillating Grid Turbulence With Viscoelastic Fluids Based on Wavelet Analysis. <b>2017</b> ,		
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784	Influence of large-scale motions on the frictional drag in a turbulent boundary layer. <i>Journal of Fluid Mechanics</i> , <b>2017</b> , 829, 751-779	3-7	28
783	Tomographic PIV investigation on 3D wake structures for flow over a wall-mounted short cylinder. <i>Journal of Fluid Mechanics</i> , <b>2017</b> , 831, 743-778	3-7	36
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773	PIV experimental study of the large-scale dynamic airflow structures in an aircraft cabin: Swing and oscillation. <b>2017</b> , 125, 180-191		16
772	Effect of blade tip geometry on tip leakage vortex dynamics and cavitation pattern in axial-flow pump. <b>2017</b> , 60, 1480-1493		14
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770	Observations of Coherent Flow Structures Over Subaqueous High- and Low- Angle Dunes. <b>2017</b> , 122, 2244-2268		20
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768	Elliptical, parabolic, and hyperbolic exchanges of energy in drag reducing plane Couette flows. <b>2017</b> , 29, 115106		10
767	Coherent structures induced by dielectric barrier discharge plasma actuator. <b>2017</b> , 31, 1850038		3
766	Effect of chord-to-diameter ratio on vertical-axis wind turbine wake development. <b>2017</b> , 58, 1		13
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760	Transitional-turbulent spots and turbulent-turbulent spots in boundary layers. <b>2017</b> , 114, E5292-E5299		57
759	Study of air-core vortical flow structure induced by a plughole vortex. <i>Journal of Fluid Mechanics</i> , <b>2017</b> , 823, 787-818	3-7	5
758	The Development of Packets of Hairpin Vortices in Laminar Channel Flows in Response to Localized Disturbances. <b>2017</b> , 183-188		
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743	Physical theory for near-bed turbulent particle suspension capacity. <b>2017</b> , 5, 269-281		18

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741	Separation Control on a Bridge Box Girder Using a Bypass Passive Jet Flow. <b>2017</b> , 7, 501		14
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738	Excitation of Free Shear-Layer Instabilities for High-Speed Flow Control. <b>2018</b> , 56, 1770-1791		19
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733	Micro-PIV measurement and CFD simulation of flow field and swirling strength during droplet formation process in a coaxial microchannel. <b>2018</b> , 185, 157-167		20
732	Enhancement of aerodynamic performance of a heaving airfoil using synthetic-jet based active flow control. <b>2018</b> , 13, 046005		9
731	Vortex dynamics in the wake of a pivoted cylinder undergoing vortex-induced vibrations with elliptic trajectories. <b>2018</b> , 59, 1		7
730	Post-operative ventricular flow dynamics following atrioventricular valve surgical and device therapies: A review. <b>2018</b> , 54, 1-13		8
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727	Effects of flexibility and aspect ratio on the aerodynamic performance of flapping wings. <b>2018</b> , 13, 036001		20
726	Spatial Development of Shear Layer Vortices in a Reacting Jet in Crossflow. <b>2018</b> ,		
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723	Flow Interactions Between Streamwise-Aligned Tandem Cylinders in Turbulent Channel Flow. <b>2018</b> , 56, 1421-1433	9
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721	The unsteady flow features behind a heliostat in a narrow channel at a high Reynolds number: Experiment and Large Eddy Simulation. <b>2018</b> , 136, 424-438	3
720	Numerical Analysis of Fluid Dynamics of Tip Leakage Vortex with Different Gap Widths in an Axial Flow Pump. <b>2018</b> ,	1
719	Direct Numerical Simulation of Oscillatory Flow Over a Wavy, Rough, and Permeable Bottom. <b>2018</b> , 123, 1595-1611	9
718	Optimized Time-Resolved Echo Particle Image Velocimetry- Particle Tracking Velocimetry Measurements Elucidate Blood Flow in Patients With Left Ventricular Thrombus. <b>2018</b> , 140,	6
717	Vortical structures and development of laminar flow over convergent-divergent riblets. <b>2018</b> , 30, 051901	20
716	Turbulent structures in cylindrical density currents in a rotating frame of reference. <b>2018</b> , 19, 463-492	1
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714	Distinct transition in flow statistics and vortex dynamics between low- and high-extent turbulent drag reduction in polymer fluids. <b>2018</b> , 262, 115-130	12
713	Time evolution of uniform momentum zones in a turbulent boundary layer. <i>Journal of Fluid Mechanics</i> , <b>2018</b> , 842, 554-590	3-7 26
712	Correlation analysis on volume vorticity and vortex in late boundary layer transition. <b>2018</b> , 30, 014105	27
711	Incompressible Homogeneous Isotropic Turbulence. <b>2018</b> , 99-244	1
710	Rortex: A new vortex vector definition and vorticity tensor and vector decompositions. <b>2018</b> , 30, 035103	198
709	Gas-particle turbulent flow of foursquare tangential jets in a simplified pulverized-coal firing boiler. <b>2018</b> , 29, 1463-1473	8
708	Numerical simulations of flow pattern and particle trajectories in feline aorta for hypertrophic cardiomyopathy heart conditions. <b>2018</b> , 12, 57-73	6
707	A review of methods for vortex identification in hydroturbines. <b>2018</b> , 81, 1269-1285	133

706	Near-field interaction of an inclined jet with a crossflow: LIF visualization and TR-PIV measurement. <b>2018</b> , 21, 19-38		7
705	Forced convection heat transfer from the biomimetic cylinder inspired by a harbor seal vibrissa. <b>2018</b> , 117, 548-558		15
704	PIV Measurements of a Turbulent Boundary Layer Perturbed by a Wall-Mounted Transverse Circular Cylinder Element. <b>2018</b> , 100, 365-389		9
703	Turbulent Flow over Steep Steady and Unsteady Waves under Strong Wind Forcing. <b>2018</b> , 48, 3-27		27
702	Forced convection heat transfer from the helically twisted elliptic cylinder inspired by a daffodil stem. <b>2018</b> , 119, 105-116		16
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696	The State of the Art in Vortex Extraction. <b>2018</b> , 37, 149-173		51
695	Coherent structures in the flow field generated by rigid flapping wing in hovering flight mode. <b>2018</b> , 402, 012155		0
694	Wall-based identification of coherent structures in wall-bounded turbulence. <b>2018</b> , 1001, 012007		5
693	Contributions of Vortical/Non-Vortical Structures to Velocity/Vorticity Correlations and Net Force in Channel Flow. <b>2018</b> , 87, 094402		
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691	Measurement of the flow field induced by a spark plasma using particle image velocimetry. <b>2018</b> , 59, 1		11
690	Application of Airborne Infrared Remote Sensing to the Study of Ocean Submesoscale Eddies. <b>2018</b> , 4,		8
689	Vortex Flows in the Solar Atmosphere: Automated Identification and Statistical Analysis. <b>2018</b> , 869, 169		10

688	Evaluation of vortex identification methods based on two- and three-dimensional swirling strengths. <b>2018</b> , 30, 125102		4
687	Multi-Plane Characterization of the Turbulent Boundary Layer. <b>2018</b> ,		1
686	Axisymmetric jet impingement on a dimpled surface: Effect of impingement location on flow field characteristics. <b>2018</b> , 74, 53-64		6
685	A selected review of vortex identification methods with applications. <b>2018</b> , 30, 767-779		63
684	Flow-induced oscillations of low-aspect-ratio flexible plates with various tip geometries. <b>2018</b> , 30, 097102		12
683	The spatial structure of the logarithmic region in very-high-Reynolds-number rough wall turbulent boundary layers. <i>Journal of Fluid Mechanics</i> , <b>2018</b> , 857, 704-747	3-7	18
682	Study on vorticity structures in late flow transition. <b>2018</b> , 30, 104108		24
681	Feature Extraction From Time Resolved Reacting Flow Data Sets. <b>2018</b> ,		2
680	Coherent structures over riblets in turbulent boundary layer studied by combining time-resolved particle image velocimetry (TRPIV), proper orthogonal decomposition (POD), and finite-time Lyapunov exponent (FTLE). <b>2018</b> , 27, 104701		8
679	Time-resolved PIV measurement of influence of upstream roughness on separated and reattached turbulent flows over a forward-facing step. <b>2018</b> , 8, 105110		12
678	Dynamic Particle Transport in Horizontal Pipes Based on Three-Layer Modeling: Simulation and Experimental Study. <b>2018</b> ,		
677	Application of the Vortex Identification Algorithms in the Study of the Shear Layer in A 3/4 Open Jet Automotive Wind Tunnel. <b>2018</b> ,		
676	Influence of straight nozzle geometry on the supersonic under-expanded gas jets. <b>2018</b> , 339, 92-104		4
675	Error reduction for time-resolved PIV data based on Navier-Stokes equations. <b>2018</b> , 59, 1		13
674	Small-scale structure and energy transfer in homogeneous turbulence. <i>Journal of Fluid Mechanics</i> , <b>2018</b> , 854, 505-543	3-7	15
673	Active and Passive Turbulent Boundary-Layer Drag Reduction. <b>2018</b> , 56, 3835-3847		61
672	Experimental study of human thermal plumes in a small space via large-scale TR PIV system. <b>2018</b> , 127, 970-980		8
671	Survey of the near wake of an axial-flow hydrokinetic turbine in quiescent conditions. <b>2018</b> , 129, 92-101		19

670	Evolution of low-aspect-ratio rectangular synthetic jets in a quiescent environment. <b>2018</b> , 59, 1		6
669	Numerical investigation of the impact of computational resolution on shedding cavity structures. <b>2018</b> , 107, 33-50		25
668	Flapping Flight of Tiny Insects: Role of Bristled Wings. <b>2018</b> ,		
667	Three-Dimensional Structure of the Compressible Mixing Layer of an Axisymmetric, Supersonic, Separated Flow. <b>2018</b> ,		1
666	Necessity of dimensional support for the reliable calculation of finite-time Lyapunov exponent fields from experimental data. <b>2018</b> ,		
665	Toward vortex identification based on local pressure-minimum criterion in compressible and variable density flows. <i>Journal of Fluid Mechanics</i> , <b>2018</b> , 850, 5-17	3-7	11
664	Modulating the Near-Wall Velocity Fields in Wall-Bounded Turbulence via Discrete Surface Roughness. <b>2018</b> , 56, 2642-2652		7
663	Direct Numerical Simulation of the Self-Noise Radiated by the Installed Controlled-Diffusion Airfoil at Transitional Reynolds Number. <b>2018</b> ,		6
662	Volumetric Study of a Turbulent Boundary Layer and Swept Impinging Oblique SBLI at Mach 2.3. <b>2018</b> ,		4
661	Unsteady large-scale flow patterns and dynamic vortex movement in near-field triple buoyant plumes. <b>2018</b> , 142, 288-300		12
660	Tubular limiting stream surface: Bornado in three-dimensional vortical flow. <b>2018</b> , 39, 1631-1642		0
659	Determination of epsilon for Omega vortex identification method. <b>2018</b> , 30, 541-548		69
658	Multi-mode responses, rivulet dynamics, flow structures and mechanism of rain-wind induced vibrations of a flexible cable. <b>2018</b> , 82, 154-172		19
657	Comparison of swirling strengths derived from two- and three-dimensional velocity fields in channel flow. <b>2018</b> , 8, 055302		3
656	Geometrical structure analysis of a zero-pressure-gradient turbulent boundary layer. <i>Journal of Fluid Mechanics</i> , <b>2018</b> , 846, 318-340	3-7	1
655	Scale interaction and arrangement in a turbulent boundary layer perturbed by a wall-mounted cylindrical element. <b>2018</b> , 30, 055103		12
654	Nonlinear optimal large-scale structures in turbulent channel flow. <b>2018</b> , 72, 74-86		7
653	Vortex and comparison with eigenvalue-based vortex identification criteria. <b>2018</b> , 30, 085107		137



652	Large eddy simulation of forced convection heat transfer from wavy cylinders with different wavelengths. <b>2018</b> , 127, 683-700		7
651	PIV measurement of human thermal convection flow in a simplified vehicle cabin. <b>2018</b> , 144, 305-315		7
650	Direct numerical simulations of temporally decelerating turbulent pipe flows. <b>2018</b> , 32, 3713-3726		0
649	Aerodynamic characteristics along the wing span of a dragonfly. <b>2018</b> , 221,		12
648	Numerical simulation of vortex in residual heat removal system during mid-loop operation. <b>2018</b> , 337, 428-438		1
647	Objective Lagrangian Vortex Detection in the Solar Photosphere. <b>2018</b> , 863, L2		10
646	A new kind of hairpin-like vortical structure induced by cross-interaction of sinuous streaks in turbulent channel. <b>2018</b> , 27, 084701		1
645	Effects of superhydrophobic surfaces on the flow around an NACA0012 hydrofoil at low Reynolds numbers. <b>2018</b> , 59, 1		18
644	Partially filled pipes: experiments in laminar and turbulent flow. <i>Journal of Fluid Mechanics</i> , <b>2018</b> , 848, 467-507	3.7	11
643	Influence of backflow on skin friction in turbulent pipe flow. <b>2018</b> , 30, 065104		11
642	Reynolds number effect on the fluid flow and heat transfer around a harbor seal vibrissa shaped cylinder. <b>2018</b> , 126, 618-638		12
641	Extension of POD Analysis Toward the Three-Dimensional Coherent Structure. <b>2018</b> , 39-50		
640	Experimental Investigation of the Flow Structure over a Delta Wing Via Flow Visualization Methods. <b>2018</b> ,		2
639	Definitions of vortex vector and vortex. <i>Journal of Fluid Mechanics</i> , <b>2018</b> , 849, 312-339	3.7	62
638	Attached Eddy Model of Wall Turbulence. <b>2019</b> , 51, 49-74		118
637	On the Thresholds of Vortex Identification Methods. <b>2019</b> , 45-49		2
636	Shear Layer Dynamics in a Reacting Jet in Crossflow. <b>2019</b> , 37, 5173-5180		14
635	Structure conditioned velocity statistics in a high pressure swirl flame. <b>2019</b> , 37, 5031-5038		4

634	An objective version of the Rortex vector for vortex identification. <b>2019</b> , 31, 065112		29
633	Liutex (vortex) core definition and automatic identification for turbulence vortex structures. <b>2019</b> , 31, 857-863		31
632	Direct numerical simulation of conical shock wave turbulent boundary layer interaction. <i>Journal of Fluid Mechanics</i> , <b>2019</b> , 877, 167-195	3-7	14
631	Relation Between the Finite-Time Lyapunov Exponent and Acoustic Wave. <b>2019</b> , 57, 5114-5125		1
630	Wavelet Coherency Structure in Open Channel Flow. <b>2019</b> , 11, 1664		3
629	Large-eddy simulation of turbulent natural-bed flow. <b>2019</b> , 31, 085105		16
628	Vortical structures in the cavitating flow in the Francis-99 draft tube cone under off-design conditions with the new omega vortex identification method. <b>2019</b> , 1296, 012011		2
627	Statistical analysis of vortical structures in turbulent boundary layer over directional grooved surface pattern with spanwise heterogeneity. <b>2019</b> , 31, 085110		10
626	Formation and interaction of multiple secondary flow vortical structures in a curved pipe: transient and oscillatory flows. <i>Journal of Fluid Mechanics</i> , <b>2019</b> , 876, 481-526	3-7	7
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533	Vortex structures and drag reduction in turbulent channel flow with the effect of space-dependent electromagnetic force. <b>2019</b> , 176, 74-83	10
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