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Energy dissipating structures in turbulent boundary layers MARIE FARGE, Ecole Normale Superieure, Paris, ROMAIN NGUYEN VAN YEN, Freie Universitaet, Berlin, KAI SCHNEIDER, Aix-Marseille Universite — We present numerical experiments of a dipole crashing into a wall, a generic event in two-dimensional incompressible flows with solid boundaries. The Reynolds number Re is varied from 985 to 7880, and no-slip boundary conditions are approximated by Navier boundary conditions with a slip length proportional to Re^{-1}. Energy dissipation is shown to first set up within a vorticity sheet of thickness proportional to Re^{-1} in the neighborhood of the wall, and to continue as this sheet rolls up into a spiral and detaches from the wall. The energy dissipation rate integrated over these regions appears to converge towards Rey-independent values, indicating the existence of energy dissipating structures that persist in the vanishing viscosity limit. Details can be found in Nguyen van yen, Farge and Schneider, PRL, **106**, 184502 (2011).

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