

Wrinkled fibrations on near-symplectic manifolds

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Motivated by the programmes initiated by Taubes and Perutz, we study the geometry of near-symplectic 4-manifolds and broken Lefschetz fibrations on them. We present a set of four moves which allow us to pass from any given fibration to any other broken fibration which is deformation equivalent to it. The arguments rely on the introduction of a more general class of maps, which we call wrinkled fibrations and which allow us to rely on classical singularity theory. As an application, we disprove a conjecture of Gay and Kirby about essentialness of achiral singularities for broken fibrations on arbitrary closed 4-manifolds.

1:00 p.m.
Math 520
Columbia University