Traffic jams are mathematically like explosions. Drivers armed with info can defuse the bomb.

by Stephen Ornes

Traffic jams have been represented mathematically as waves of alternating heavy and light car density. When Flynn analyzed these equations, he noted striking similarities to the detonation waves that radiate outward from an explosion. As in a detonation, jamitons divide the surrounding space into upstream and downstream regions. Downstream drivers are the ones caught in the congestion; upstream drivers are the ones who are unaware of the jam they are about to hit.

Improving data flow could provide an easy fix. “Since many cars are outfitted with GPS, you could interactively convey this information to drivers,” Flynn says. Drivers approaching a forming jam could then slow down well in advance, lowering traffic density: “It reduces the severity of a jam, and it reduces the likelihood of accidents in the jam.”