1097-35-241 **Catherine Sulem*** (sulem@math.toronto.edu), 40 St George Street, Toronto, Ontario M5S2E4, Canada. *Lower bound for the rate of blow-up of singular solutions of the three dimensional Zakharov system.*

The Zakharov system describes the propagation of Langmuir waves in a non-magnetized plasma. It was derived by V.E. Zakharov in 1972 in the form of a coupled system governing the electric field complex amplitude and the density fluctuations of ions. Heuristic arguments and numerical simulations show that solutions may blow-up in a finite time both in two and three dimensions.

In two dimensions, there exist exact self-similar blowing-up solutions. In addition, Merle (1996) established a lower bound for the rate of blow-up of singular solutions in the energy space. This rate is optimal. In three dimensions, there are no known explicit blowing-up solutions. Self-similar solutions exist only asymptotically close to collapse. In the present work, we assume that the solution blows up in a finite time and we establish a lower bound for the blow-up rates of some Sobolev norms of the solution.

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