

## **Models and solutions of quasi 2D turbulence with chemical reactions.**

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Two models for quasi 2D turbulence with chemical reactions are used: a) the model of decaying turbulence; b) the model of forced turbulence. The paper presents the results of mathematical modeling of forced quasi 2D turbulence with chemical reactions. This model leads to new phenomena as compared to the case without chemical reactions. The KLB (Kraichnan-Leith-Batchelor) theory of 2D turbulence predicts the existence of two inertial ranges. The influence of chemical reactions both on forward enstrophy and inverse cascades is investigated. The characteristics of cascades for various parameters were obtained. The physical mechanism is corrected via data by generated numerical-analytical simulations.