

# FAST RADIO BURSTS AND MAGNETARS

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Since 2007 [1] fast radio bursts (FRBs) remain one of the main puzzle in astrophysics. Already in 2007 we proposed an idea that FRBs are related to strong bursts of extragalactic magnetars [2]. After 2013, when new data on FRBs have appeared [3], many more models were proposed. Still, presently the magnetar model is the leading one (see a review in [4]).

The main prediction of the magnetar model was that Galactic sources of this type can produce weak analogues of FRBs coincident with regular high-energy bursts. In April 2020 the first such event was detected simultaneously in radio [5, 6] and in X/ $\gamma$ -rays (e.g., see [7] and references therein).

In the talk I review present-day status of FRB observations and modeling, focusing on plasma properties in the emission zone. In more details I present results from [8].

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1. Lorimer D. et al.// Science. 2007. V. 318. P. 777.
  2. Popov S. B., Postnov K. A.// 2007. arXiv:0710.2006.
  3. Thornton D. et al. // Science. 2013. V. 341. P. 53.
  4. Popov S. B., Postnov K. A., Pshirkov M. S.// Physics Uspekhi. 2018. V. 61. P. 1063.
  5. Bochenek C, et al.// Nature, accepted. 2020. arXiv:2005.10828.
  6. The CHIME/FRB Collaboration, :, Andersen, B. C., et al. // Nature, accepted. 2020. arXiv:2005.10324.
  7. Ridnaia A. et al.// Nature Astronomy, accepted. 2020. arXiv:2005.11178.
  8. Lyutikov M., Popov S. B.// 2020. arXiv:2005.05093.