

Propositions belonging to this thesis

1. Fast radio bursts can have narrow spectral bandwidths (Chapter 2).
2. A yet unknown, but likely significant, number of narrow-band fast radio bursts have been missed by radio astronomers (Chapter 2).
3. FRB localization and multi-wavelength datasets are the best methods to address the FRB origin mystery (Chapter 3).
4. There are many ways to produce coherent radio emission; a corollary is that a single explanation should not be expected to describe the origin of all fast radio bursts (Chapter 3).
5. LOFAR is one of the most powerful tools to probe prompt radio emission associated with GRBs (Chapters 4 & 5).
6. If the emission is visible at low radio frequencies, LOFAR is poised to detect light created by the collision of compact objects (Chapters 4,5,6 & 7).
7. Wide-field radio instruments like LOFAR play essential roles in transient and multi-messenger/wavelength astronomy (Chapter 7).
8. A good radio astronomer is only as strong as their computing resources.
9. If academia is truly invested in equity, inclusion, diversity, and safe spaces for all, it ought to be willing to fund concrete actions.
10. The COVID-19 pandemic has laid bare the critical necessity for scientific literacy.