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Cosmic rays: interstellar gamma-ray and radio emission from our Galaxy

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Galactic cosmic rays (CR), interstellar gamma-ray emission and radio emission are related topics. CR electrons propagate in the Galaxy and interact with the interstellar medium, producing inverse Compton and bremsstrahlung emission measured in gamma rays, and synchrotron emission measured in radio. After giving an overview of the latest results with Fermi on interstellar gamma-ray emission, I will focus on complementary studies of the radio emission from the Galaxy.
Using surveys over a wide range of radio frequencies and polarization measurements, we derive from synchrotron radiation constraints on the low-energy interstellar CR electron spectrum, magnetic fields, CR source distribution and Galactic halo size.

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