Observations and modelling of the interstellar magnetic field, from large to small scales

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I will present a summary of the current state of knowledge of the interstellar magnetic field in our Galaxy, from the large Galactic scales through the intermediate scales of molecular clouds and down to the small turbulent scales. I will review what the main observational methods (synchrotron emission, Faraday rotation, dust polarization, Zeeman splitting...) have recently taught us about the properties (strength, direction, and general configuration) of the interstellar magnetic field. I will also discuss current modelling efforts together with their limitations.