



Figure 1 | Brightness temperature spectra versus time for FRB 110523. The diagonal black curve shows the pulse of radio brightness sweeping over time. The arrival time is differentially delayed (dispersed) by plasma along the line of sight. A pair of curves in white, bracketing the FRB pulse, show that the delay function matches the one expected from cold plasma. The grey horizontal bars show where data has been omitted owing to resonances within the GBT receiver. The inset shows fluctuations in brightness caused by scintillation.