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Young magnetars with fracturing crusts as fast radio burst repeaters

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Fast radio bursts (FRBs) are short (duration ~ ms) but intense (flux ~ Jy) flashes, generally believed to be of extragalactic origin due to their high dispersion measures, which appear in the GHz-band. Currently, there are two sources which are known to repeat, thereby suggesting that there may be at least a subclass of FRBs resulting from transient outbursts of a young, compact object. We discuss some of the statistics surrounding the repeating bursts, and explore what this might indicate about the progenitors. We consider the possibility that FRBs are instigated by crustal fractures in young (~ 100 yrs) magnetars, whose crust yields due to strong, and topologically complicated, magnetic stresses, which build up as the field evolves rapidly due to Hall drift and ambipolar diffusion.

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