## Abstract Submitted for the APR09 Meeting of The American Physical Society

Long, short and fake short GRBs in the canonical GRB scenario REMO RUFFINI, ICRANet and ICRA & Physics department, Univerità di Roma "Sapienza", MARIA GRAZIA BERNARDINI, Università di Roma "Sapienza," ICRA & ICRANet, CARLO LUCIANO BIANCO, ICRANet & ICRA, LETIZIA CAITO, GUSTAVO DE BARROS, Università di Roma "Sapienza," ICRA & ICRANet — We will show how all GRBs can be classified into a) the traditionally called "long" GRBs, b) the "fake" or "disguised" short GRBs and c) the "genuine" short GRBs. Samples of such classifications will be given, as well as considerations on their astrophysical progenitors. This is grounded on the canonical GRB structure implied by the fireshell model, which emphasized the existence of two sharply different components: 1) the proper GRB (P-GRB), emitted at the fireshell transparency; 2) the "extended afterglow", due to the interaction of the leftover accelerated baryons and leptons with the CircumBurst Medium (CBM). The total energy and baryon loading of the fireshell determines the relative energetics and the temporal separation between the peaks of such two components. After the observations by Swift, it has become clear that the extended afterglow emission is itself divided into two distinct components: the prompt emission phase, and a plateau phase followed by a decaying phase. The prompt emission represents the interaction of the ultrarelativistic baryons with the CBM inhomogeneities, described by a thermal radiation in the comoving frame.

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