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Jet-cocoon signatures in broad-line supernovae associated with gamma-ray bursts

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The progenitor stars of long gamma-ray bursts are rapidly rotating stripped-envelope massive stars. During the last moments of their lives, the collapse of the central core powers a supernova explosion while in the most central regions matter flows around a newly formed spinning black hole (or a magnetar). This leads to the formation of a powerful jet, which is capable to completely drill the dense external layers of the progenitor star along the core spin axis until it reaches the photosphere and escapes at relativistic speeds, emitting a GRB. I will briefly review the status-of-the-art in GRB/SN science and finally will present some new results that shed light on the role of the jet component in the collapse of stripped-envelope supernovae.