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Sommario/riassunto	It is widely recognized that differential decode-and-forward (DDF) cooperative transmission scheme is capable of providing a superior performance compared to classic direct transmissions employing differential detection, where no channel coding is used. However, the diversity gains achieved by the cooperative system become modest in practical channel coded scenarios, where the interleaving and channel coding gains dominate. Therefore, when a cooperative wireless communication system is designed to approach the maximum achievable spectral efficiency by taking the cooperation-induced multiplexing loss into account, it is not obvious, whether or not the relay-aided system becomes superior to its direct-transmission based counterpart, especially, when advanced channel coding techniques are employed. Hence in this paper the capacity of the single-relay-assisted DDF based cooperative system was studied in comparison to that of its direct-transmission based counterpart in order to answer the above-mentioned dilemma.