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*Combinatorial Designs and Code Synchronization.*

Code synchronization is a crucial component of reliable data transmission. We consider the process of transmitting data over a channel, where the data being sent can be thought as a stream of symbols from a finite alphabet. The data stream consists of consecutive messages, each message being a sequence of  $n$  consecutive symbols. The message synchronization problem that arises at the receiving end is the task to partition correctly the data stream into messages of length  $n$ , as opposed to conceiving incorrectly a sequence of  $n$  symbols being the concatenation of the end of one message with the beginning of another message as a single message. The paper discusses various combinatorial techniques that are used in code synchronization and employ combinatorial designs, cyclotomy and finite geometry. (Received August 10, 2006)