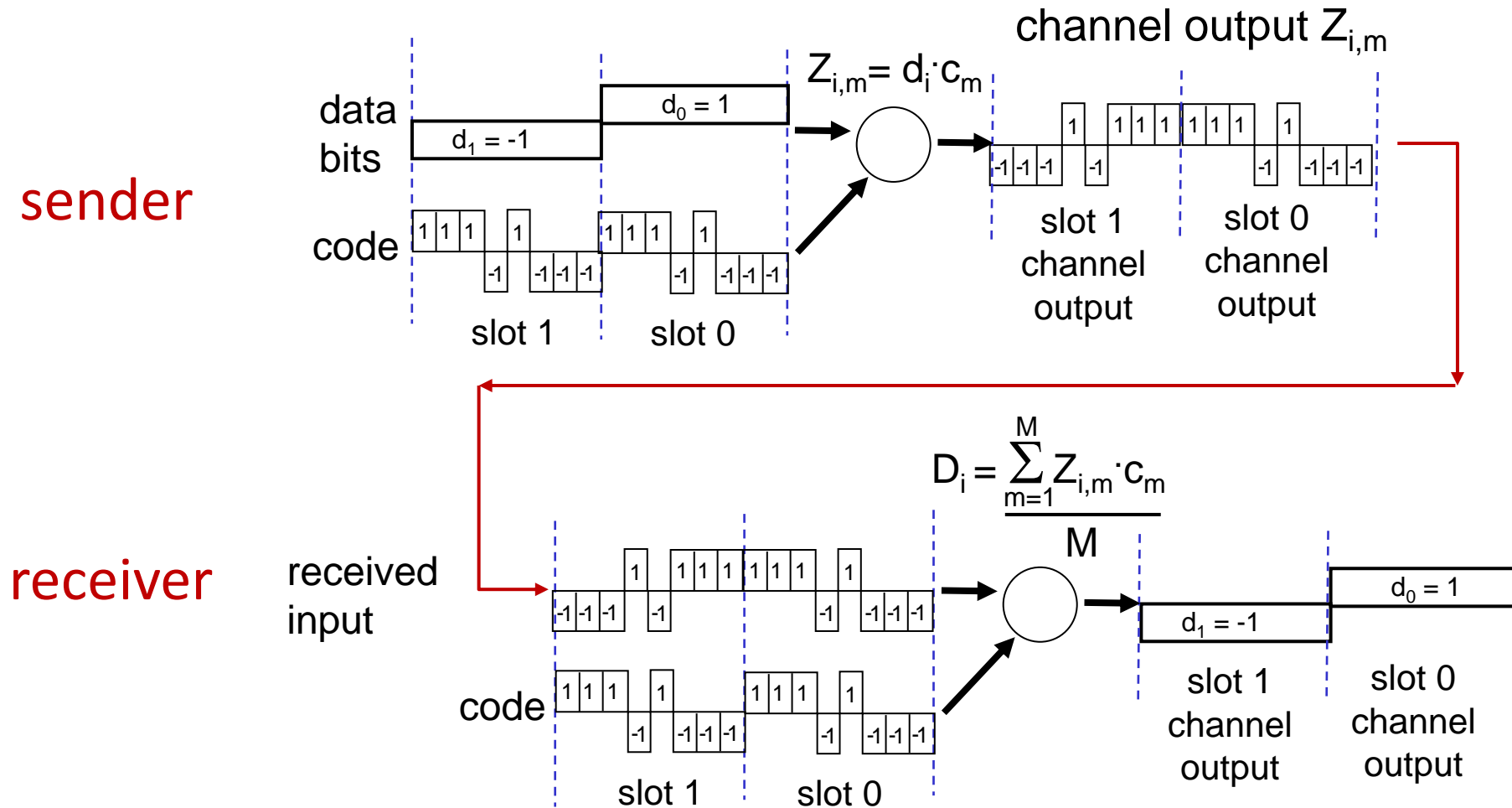


Code Division Multiple Access (CDMA)

- unique “code” assigned to each user; i.e., code set partitioning
 - all users share same frequency, but each user has own “chipping” sequence (i.e., code) to encode data
 - allows multiple users to “coexist” and transmit simultaneously with minimal interference (if codes are “orthogonal”)
- **encoding:** inner product: (original data) \times (chipping sequence)
- **decoding:** summed inner-product: (encoded data) \times (chipping sequence)

CDMA encode/decode

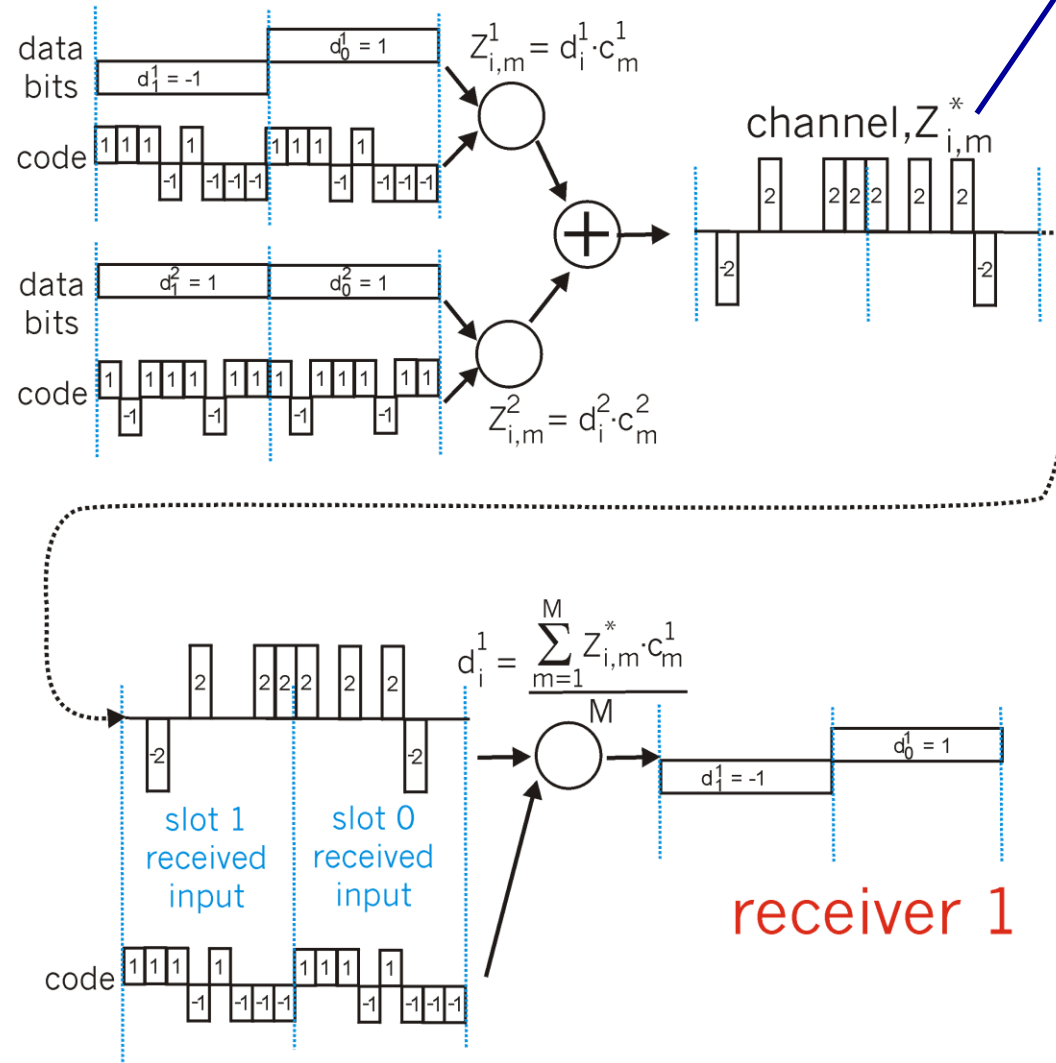


... but this isn't really useful yet!

CDMA: two-sender interference

Sender 1

Sender 2



channel sums together transmissions by sender 1 and 2

using same code as sender 1, receiver recovers sender 1's original data from summed channel data!

... now *that's* useful!