

In this paper, we present a practical method to construct dirty paper coding (DPC) schemes using sum codes. Unlike the commonly used approach to DPC where the coding scheme involves concatenation of a channel code and a quantization code, the proposed method embodies a unified approach that emulates the binning method used in the proof of the DPC result. Auxiliary bits are used to create the desired number of code vectors in each bin. Sum codes are obtained when information sequences augmented with auxiliary bits are encoded using linear block codes. Sum-code-based DPC schemes can be implemented using any linear block code, and entail a relatively small increase in decoder complexity when compared to standard communication schemes. They can also lead to significant reduction in transmit power in comparison to standard schemes.