

This paper considers a  $K$ -user multiple-input multiple-output (MIMO) interference channel (IC) where 1) the channel state information obtained by the transmitters (CSIT) is completely outdated and 2) the number of transmit antennas at each transmitter, i.e.,  $M$  is greater than the number of receive antennas at each user, i.e.,  $N$ . The usefulness of the delayed CSIT was first identified in a  $K$ -phase retrospective interference alignment (RIA) scheme proposed by Maddah-Ali and Tse for the multiple-input single-output broadcast channel, but the extension to the MIMO IC is a non-trivial step as each transmitter only has the message intended for the corresponding user. Recently, Abdoli et al. focused on a single-input single-output IC and solved such bottleneck by inventing a  $K$ -phase RIA with distributed overheard interference retransmission. In this paper, we propose two  $K$ -phase RIA schemes suitable for the MIMO IC by generalizing and integrating some key features of both Abdoli's and Maddah-Ali's works. The two schemes jointly yield the best known sum degrees-of-freedom (DoF) performance so far. For the case  $(M/N) \geq K$ , the achieved sum DoF is asymptotically given by  $(64/15)N$  when  $K \rightarrow \infty$ .