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EPOSIC Channels

In this work, we introduce the EPOSIC channels, a class of SU(2)-irreducibly covariant quantum channels. We show that if H and K are SU(2)-irreducible spaces then the EPOSIC channels from End(H) into End(K) are the extreme points of the convex set of all SU(2)-irreducibly covariant channels from End(H) into End(K). We get a set of Kraus operators, the Choi matrix, a complementary channel, and the dual map of EPOSIC channel. As an application of the EPOSIC channels, we get a new example of a positive map that is not completely positive. We obtain a bound for the minimal output entropy of the tensor product of two SU(2)-irreducibly covariant channels. We also examine the E.B.T property of EPOSIC channels.