



## Mathematics and CS Seminar

# Symmetry preserving quantum channels and their minimal output entropy

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Host: Robert Seiringer

For a group  $G$  we study quantum channels, i.e., completely positive trace preserving maps between operators on irreducible unitary representations of the group that intertwine the group action, i.e., are equivariant. We will mainly focus on  $G=SU(2)$  but also discuss  $SU(d)$  for  $d>2$ . It turns out that the set of equivariant  $SU(2)$  channels forms a finite dimensional simplex and we will describe the critical points and give several ways to represent them. Using majorization we will determine the minimal output entropy of two of these extremal channels. Generalizations to  $SU(2)$  and several open questions will be discussed

**Tuesday, September 24, 2024 04:30pm - 05:30pm**

Office Bldg West / Ground floor / Heinzl Seminar Room (I21.EG.101)



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