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ONE OPEN PROBLEM IN BAYESIAN COMMUNICATION

BAYESIAN COMMUNICATION WITH TWO RECEIVERS

random state:

$\theta \in \{0,1\}$ equally likely

informed Sender:

$s_1 \in S_1$

$s_2 \in S_2$

signals with joint distribution

$P(s_1, s_2 \mid \theta)$

Two uninformed Receivers:

POSTERIOR

$P(\theta = 1 \mid s_1)$

POSTERIOR

$P(\theta = 1 \mid s_2)$

signalling policy $P(s_1, s_2 \mid \theta)$ → joint distribution μ of posteriors on the unit square. The set F of all feasible μ is convex.

Open question: Are there non-atomic extreme points of F ?

DISCUSSION

Why is it important?

Optimal policies in Bayesian persuasion ⟷ extreme points

What is known?

One receiver*:

- Extreme points have support of at most two
- Two signals are always enough for persuasion

*Aumann, Maschler Repeated games with incomplete information, MIT, 1995

Kamenica, Gentzkow Bayesian persuasion, AER, 2011

Two receivers:**

- There are extreme points with countably-infinite support

**Arieli, Babichenko, Sandomirskiy, Tamuz Feasible joint posterior beliefs, JPE (to appear)