### Mechanism Design for Participatory Budgeting

Simon Rey

#### Institute for Logic, Language and Computation (ILLC) University of Amsterdam

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### A Social Choice Problem





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#### Multi-Winner Voting









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→ Participatory budgeting can be seen as an extension of multi-winner voting in which a budget constraint is added.

What properties should the "best" mechanisms satisfy?

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 $\rightarrow$  All these properties cannot be achieved simultaneously, but we can study them independently and try to identify the overlap!

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Proportionality X

Incentive Compatibility

x

Truth-Tracking Ability Algorithmic Efficiency

x

 $\checkmark$  Adaptability  $\checkmark$ 

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Truth-Tracking

Ability

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Proportionality 🗸

Proportionality X

Incentive Compatibility

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Compatibility

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★ Algorithmic Efficiency



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• Can we characterise some participatory budgeting rules by means of axioms?