

Book Club-”Cake Cutting: Be Fair if you Can” - Meeting 1

written by Iniyan Joseph on Functor Network

original link: <https://functor.network/user/853/entry/309>

1 Goals

1. Finite Cutting Methods
 - (a) Discuss notion of envy-freeness and fairness
 - (b) Describe Banach-Knaster last diminisher protocol
 - i. Show time complexity
 - (c) Describe Sequential pairs protocol
 - i. Show time complexity
 - (d) Describe Even-Paz protocol
 - i. Show time complexity
 - (e) Describe Selfridge-Conway protocol
2. Describe moving knife protocols
 - (a) Dubins-Spanier protocol for n players
 - (b) Stromquist envy-free protocol for $n=3$ players
3. Describe ”Single Cut Suffices”
 - (a) Improve sequential pairs protocol
4. Revise problem set

2 Finite Cutting Methods

2.1 What are envy-freeness and fairness?

2.2 Last Diminisher

2.3 Sequential pairs

2.4 Even-Paz

2.5 Selfridge-Conway

3 Moving Knife

3.1 Dubins-Spanier

3.2 Stromquist

4 Single-Cut Principle