Verifying Hex Strategies

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Thankyou ...

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overview

- Hex proofs
- strategy trees
- excision
- combinatorial sum
Hex strategies

48 Nash $n \times n \ 1pw$

57 Gardner/Shannon $n \times (n - 1) \ 2pw$

95/00 Enderton/Van Rijswijck $6 \times 6$

01-03 Yang/Liao/Pawlak $7 \times 7, 8 \times 8, 9 \times 9$

03 H/Björnsson/Johanson/Kan/
Po/VanRijswijck $7 \times 7$

04 Noshita $7 \times 7, 8 \times 8$
excised trees and winning strategies

• valid tree
  – each node is board cell
  – no repeated cell on path to root

• satisfying tree
  – valid
  – each leaf satisfies win condition

• elusive subtree
  combined intersection of
  children’s subtree cell sets is empty

• elusive tree
  all induced subtrees elusive

• winning strategy
  if and only if
  associated excised tree is
  elusive and satisfying