

1. Introduction

Stack Shove is a combinatorial game played with stacks of counters, where players take turns making one of two possible moves:

- **Removal Move:** Remove any positive number of counters from a single stack.
- **Shoving Move:** Transfer some counters from one stack into an adjacent stack, provided the target stack has fewer counters.

In the original game, players have asymmetric shoving options—Left shoves leftward, and Right shoves rightward—making it a partisan game. The all-small variation modifies the game to ensure every position offers balanced move options to both players.

2. All-Small Variation

To transform Stack Shove into an all-small (or dicot) game, we introduce a parity rule for removals while keeping the shoving mechanics unchanged:

- **Left's Removal Rule:** Left may remove only an odd number of counters from a stack.
- **Right's Removal Rule:** Right may remove only an even number of counters from a stack.
- **Shoving Rule:** Players retain their original shoving directions (Left shoves leftward, Right shoves rightward).

3. Effect of the Variation

This modification ensures that every position remains balanced, as both players always have valid and equivalent move options. Specifically:

- Any stack with an odd number of counters allows only Left to remove a single counter first, and Right must remove an even number afterward, preserving symmetry.
- Shoving moves remain a strategic option, but no player gains a significant advantage by extra shoving choices.
- The game's value is now an infinitesimal (fuzzy to zero), meaning that every position behaves in a neutral and balanced way rather than favoring one player over the other.

Position	Game Value	Atomic Weight
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[3]	↑	1/2
[3, 2]	*	0
[2, 4, 6]	↓ + ↓ + ↓	-3/2