

1. each S_i crosses $1\leq$ each day

$\Rightarrow NM \leq$ crosses.

2. Invariant: $\forall S_i \quad S_i$ rejected by U_i

$\rightarrow U_i$ has a better suitor.

if at some day U_i gets $h_i \rightarrow$ best

h_i will remain and rest go home.

3. Proof by \times . if S_i gets rejected

by $\forall U \rightarrow$ shortage of $S \rightarrow S \rightarrow$ rejected. \times

4. ~~$\{S_i, U_i\}$~~ \checkmark

5. \checkmark

6. assume for \times that $S_i - U_i$ is rogue .

Case 1. S_i didn't apply

Case 2. U_i rejected.

7. by WOP first day of U_{opt} rejecting

