

# Operations Scheduling

## ■ Gupta – Heuristic

- Gupta (1972)
- exact for 2-machine problem and 3-machine problem, where the 2nd machine is dominated

$$e_i = \begin{cases} 1 & \text{if } p_{i1} < p_{im} \\ -1 & \text{if } p_{i1} \geq p_{im} \end{cases} \quad s_i = \frac{e_i}{\min_{k=1, \dots, m-1} \{p_{i,k} + p_{i,k+1}\}}$$

- Sorting jobs with nonincreasing  $s_i$

$$(s_{[1]} \geq s_{[2]} \geq \dots \geq s_{[n]})$$

Job	p1+p2	p2+p3	p3+p4	min	ei	si	[i]
1	14	19	8	8	1	0.12	1
2	22	30	36	22	1	0.05	3
3	26	22	17	17	-1	-0.06	4
4	29	19	8	8	-1	-0.12	5
5	14	8	21	8	1	0.12	2