

**theproof**  $\Gamma = (V, E), \mathcal{D}(\Gamma)$  its neighbourhood design.

$[P, Q] \in E$  is a point of the line graph  $L(\Gamma)$  and  $\overline{[P, Q]}$  is a block of  $\mathcal{D}(\Gamma)$ :

$$\overline{[P, Q]} = \{[P, R] \mid R \neq Q\} \cup \{[R, Q] \mid R \neq P\}$$

thus  $v^{\overline{[P, Q]}} + v^{\overline{[R, S]}} - v^{\overline{[P, S]}} - v^{\overline{[Q, R]}} = -2(v^{[P, Q]} + v^{[R, S]} - v^{[P, S]} - v^{[Q, R]})$ . ■