

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