

1.2.14

$$|P-Q| \leq |P-Q| \quad \text{according to squaring}$$

$$||P-Q||^2 \leq |P-Q|^2$$

$$|P|^2 - 2|PQ| + |Q|^2 \leq |P|^2 - 2PQ + |Q|^2$$

$$-2|PQ| \leq -2PQ$$

$$|PQ| \leq PQ$$

So all vectors in \mathbb{R}^n is inequality