

③ X sp top \Rightarrow non può essere contemporaneamente 2-varietà e n -varietà ($n > 2$)

$$X_2 := X \text{ 2-var top}, \quad X_n := X \text{ n-var top } (n > 2)$$

$$X_2 \Rightarrow X_2 \overset{\text{omeo}}{\cong} \mathbb{R}^2 \text{ localmente}$$

$$\Rightarrow X_2 \setminus \{p\} \overset{\text{omeo}}{\cong} \mathbb{R}^2 \setminus \{0\} \text{ localmente}$$

$$\Rightarrow X_2 \setminus \{p\} \simeq \mathbb{R}^2 \setminus \{0\} \text{ omeotopi localmente}$$

$$\Rightarrow \pi_1(X_2 \setminus \{p\}) \overset{\text{iso}}{\cong} \pi_1(\mathbb{R}^2 \setminus \{0\}) \cong \mathbb{Z} \text{ localmente}$$

$$X_n \Rightarrow X_n \overset{\text{omeo}}{\cong} \mathbb{R}^n \text{ localmente}$$

$$\Rightarrow X_n \setminus \{p\} \overset{\text{omeo}}{\cong} \mathbb{R}^n \setminus \{0\} \text{ localmente}$$

$$\Rightarrow X_n \setminus \{p\} \simeq \mathbb{R}^n \setminus \{0\} \text{ omeotopi localmente}$$

$$\Rightarrow \pi_1(X_n \setminus \{p\}) \overset{\text{iso}}{\cong} \pi_1(\mathbb{R}^n \setminus \{0\}) \cong \{e\} \text{ localmente}$$

non
isomorfi

$$\Rightarrow X_2 \overset{\text{omeo}}{\not\cong} X_n$$

