

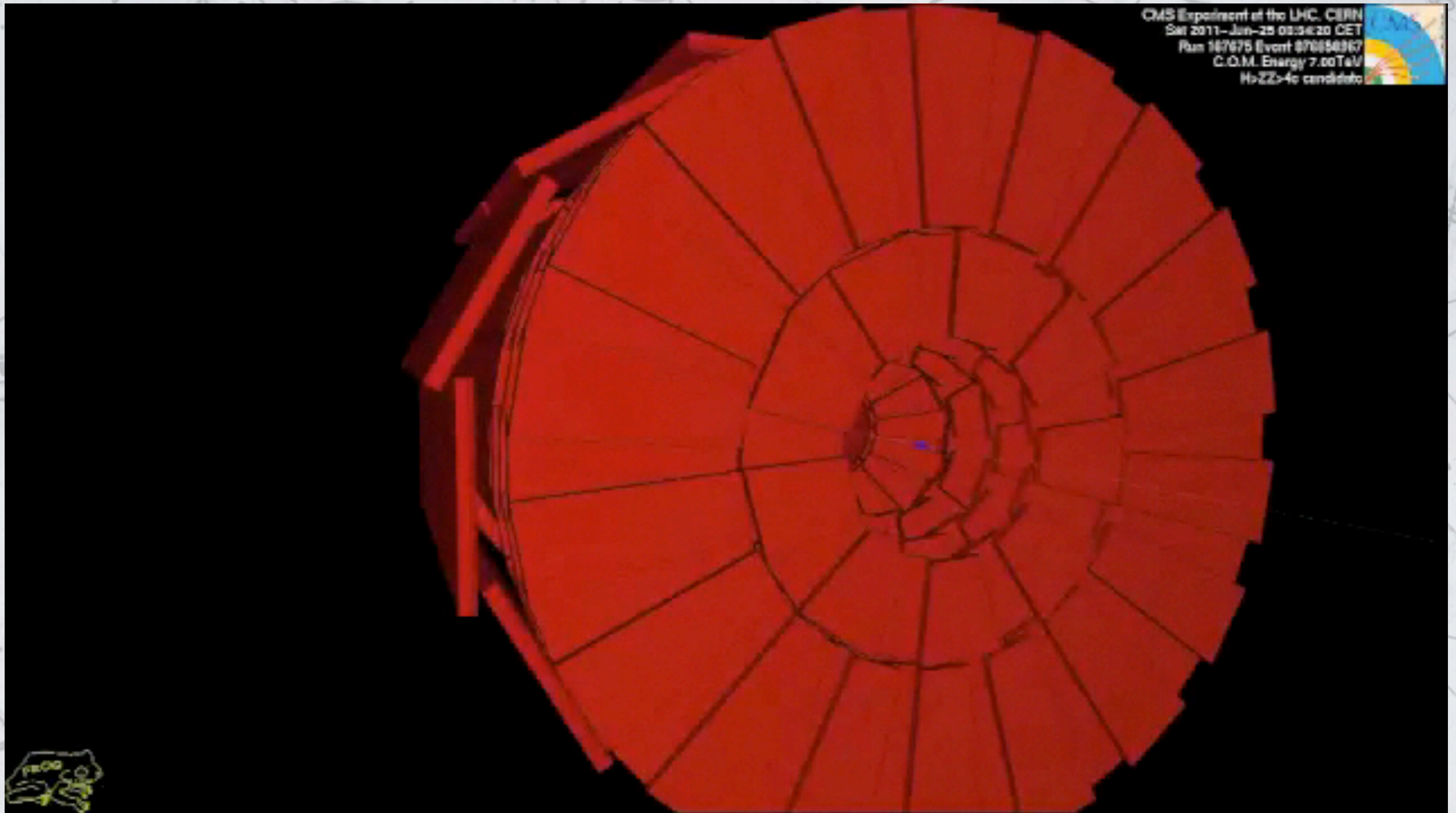
# ACCELERATORI DI PARTICELLE

Giovanni Organtini

“Sapienza” Università di Roma & INFN-Sez. di Roma

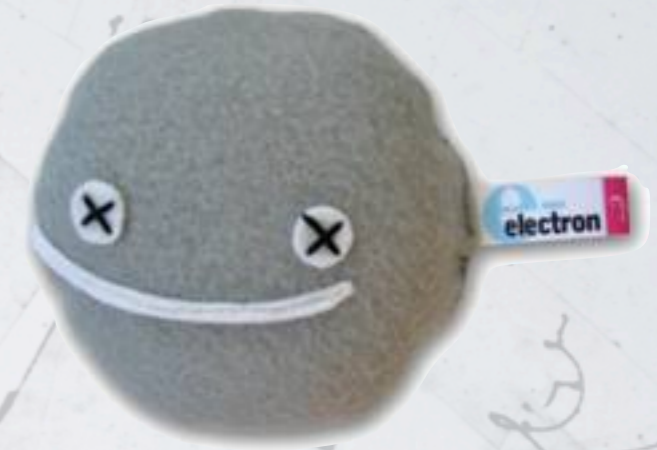


# FISICA AI COLLIDER





# LE PARTICELLE

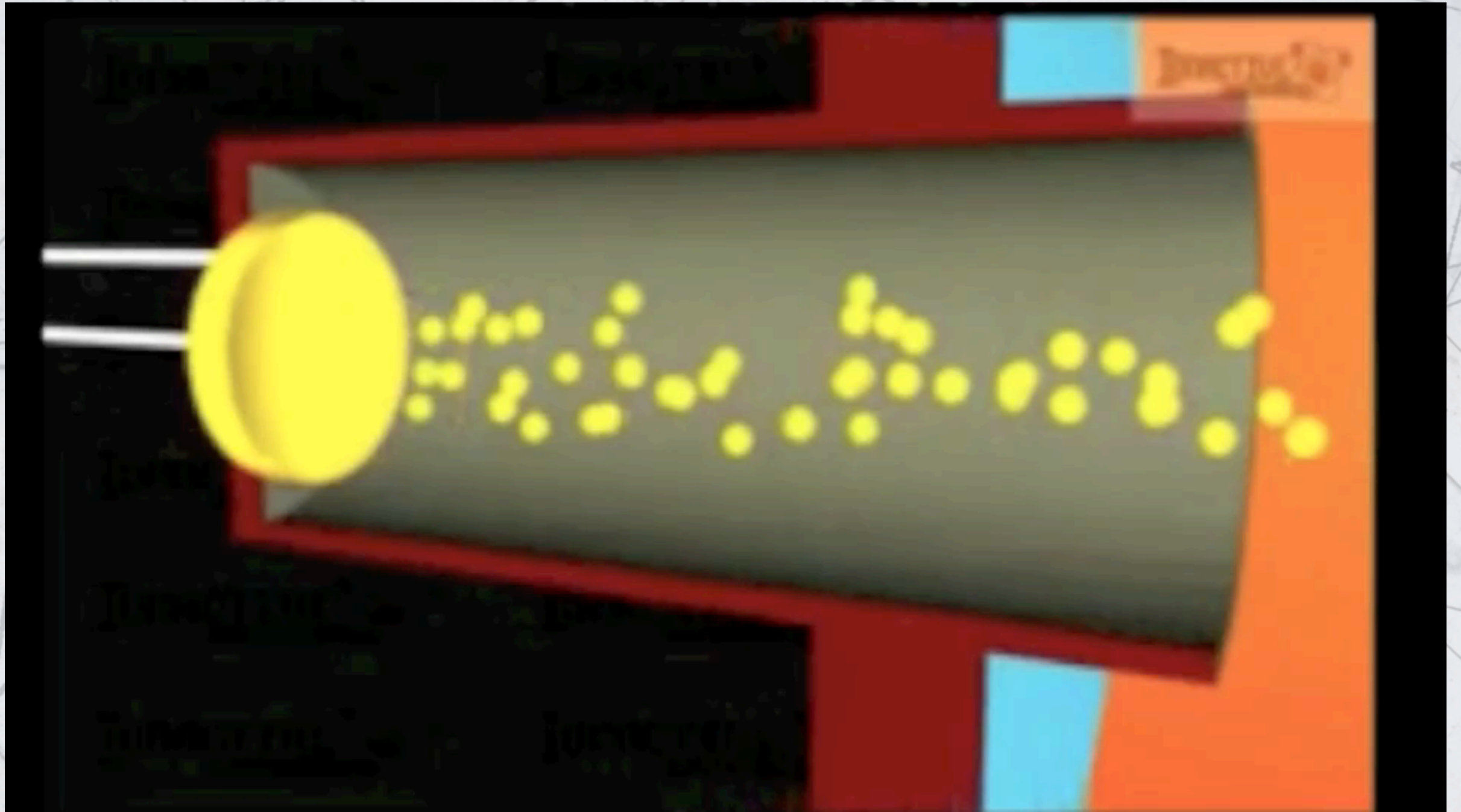


$$\vec{F} = q \left( \vec{E} + \vec{v} \times \vec{B} \right)$$

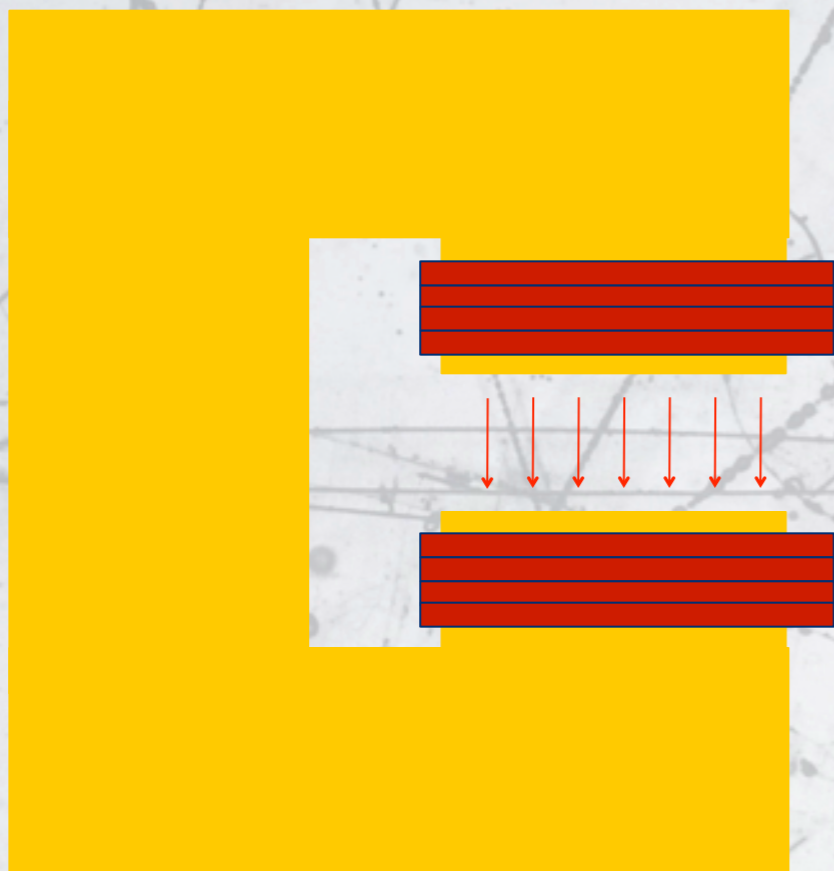
# L'ACCELERATORE



# GUIDE D'ONDA

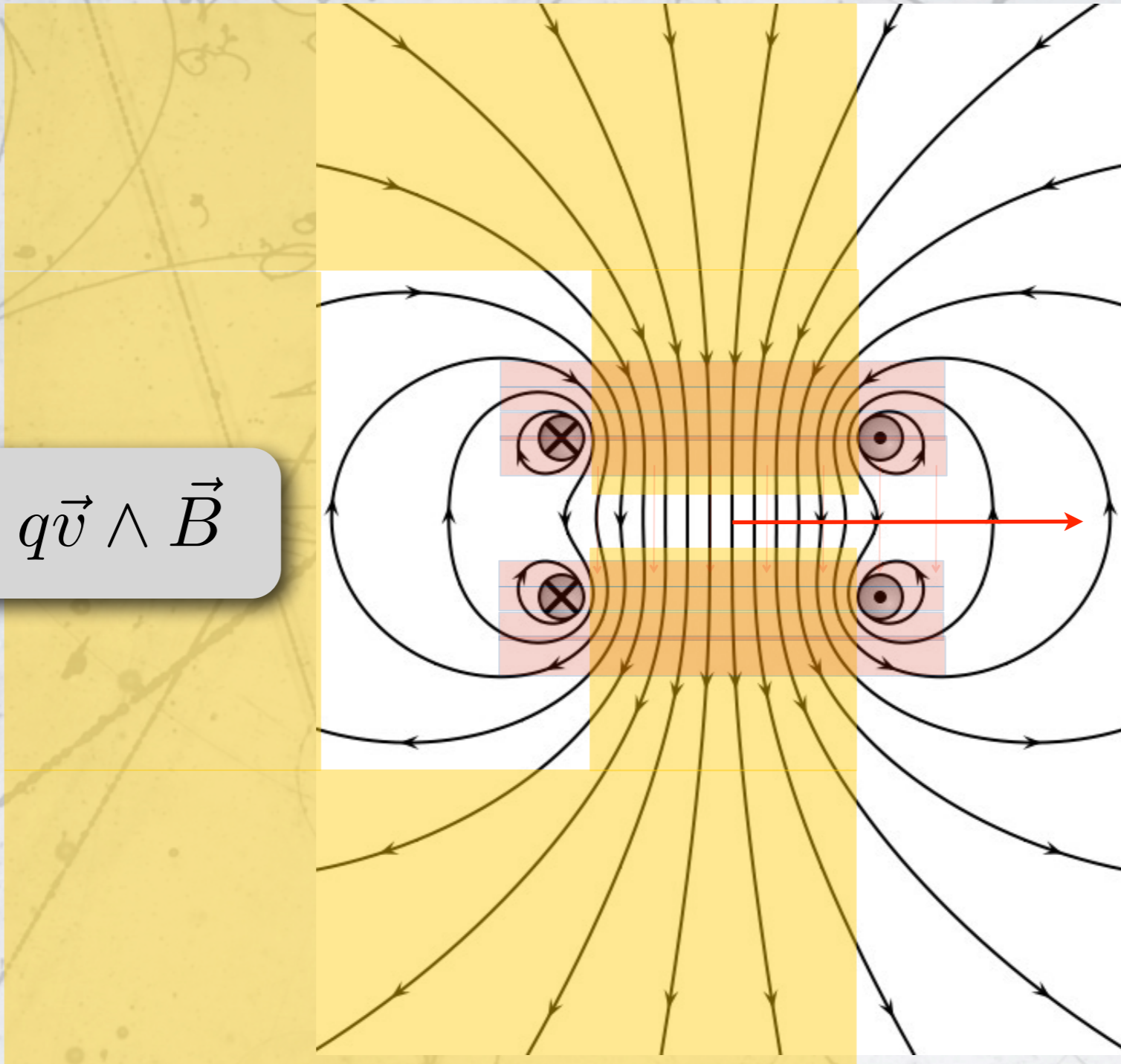


# GUIDA



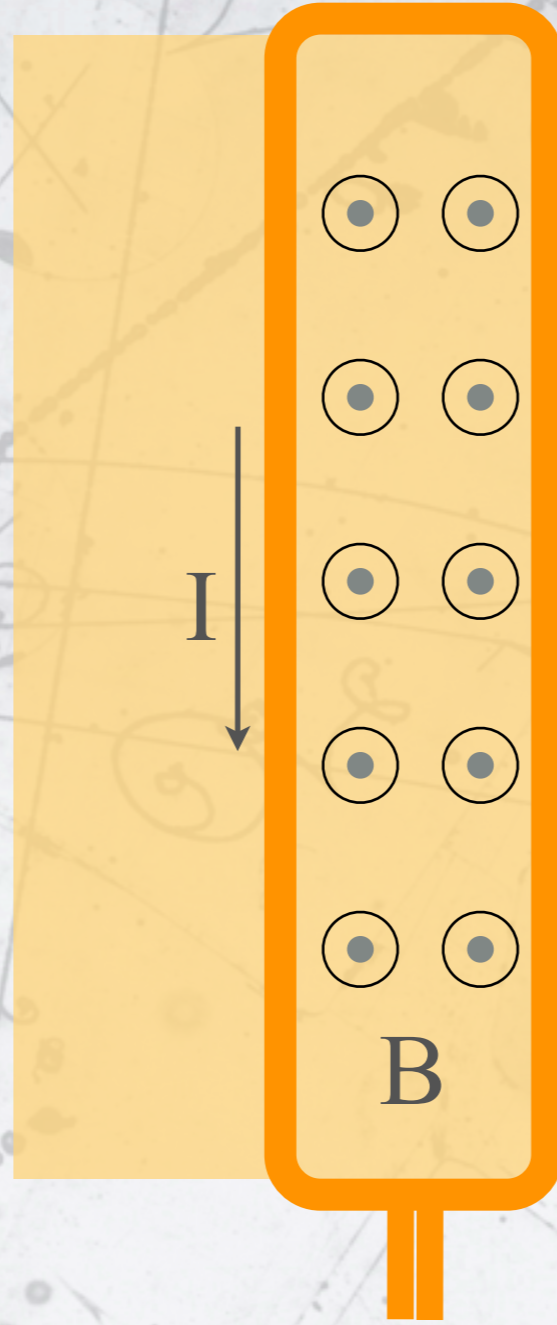
# MAGNETI DEFLETTORI

$$\vec{F} = q\vec{v} \wedge \vec{B}$$

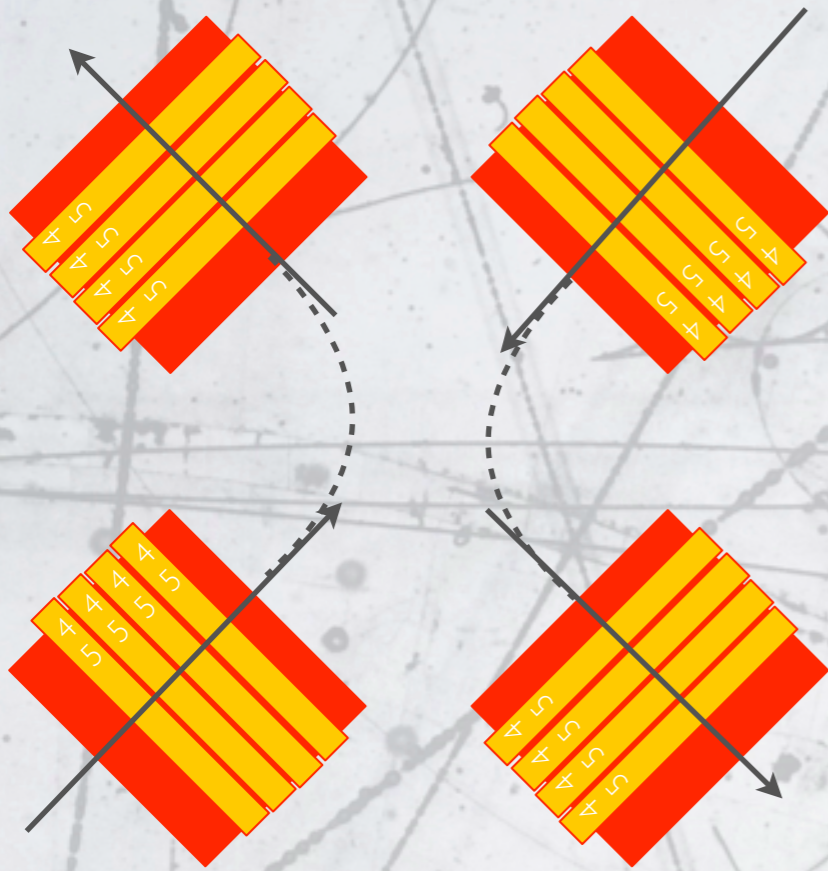


$$\vec{B} = \mu_0 n I \hat{z}$$

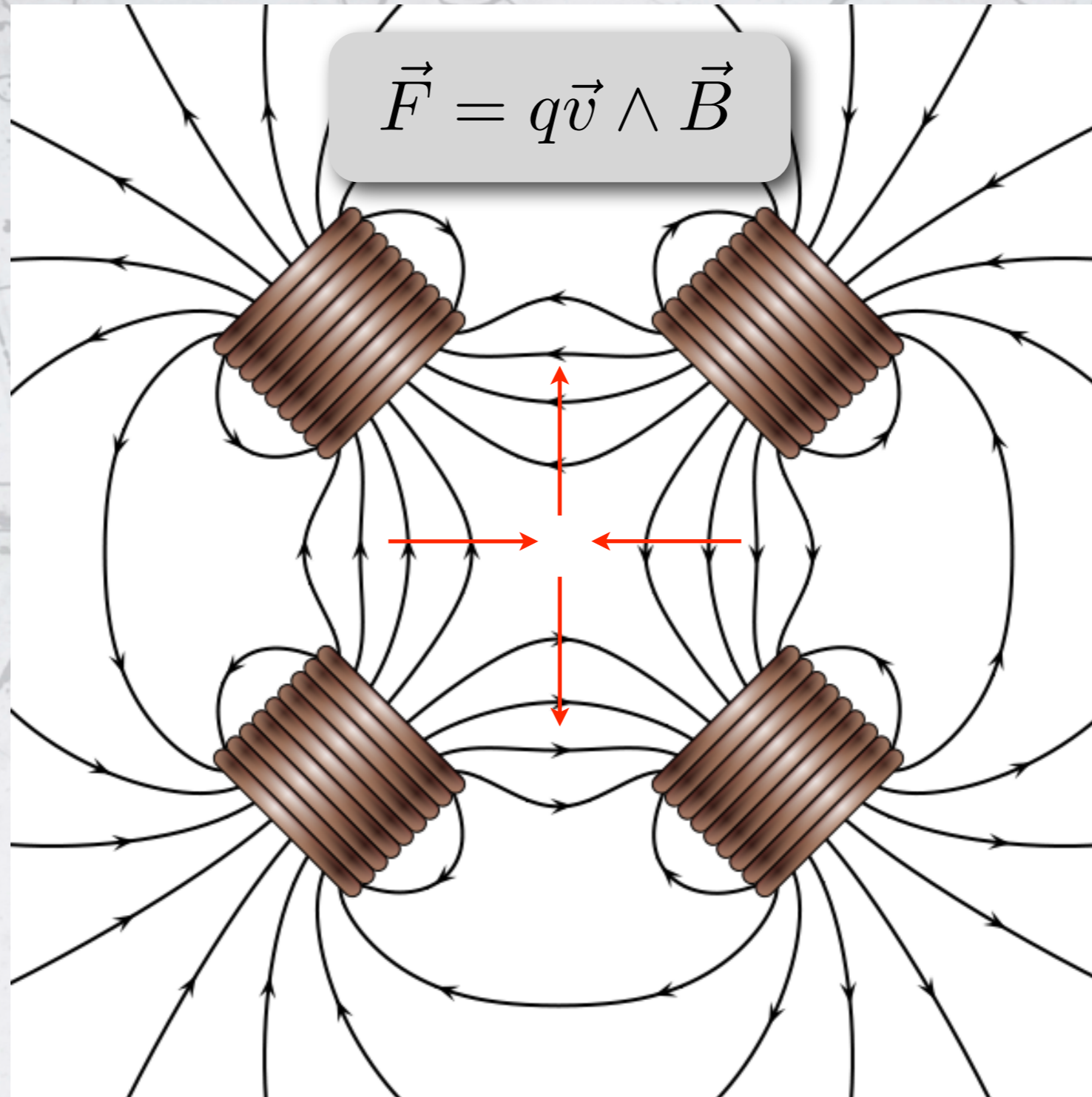




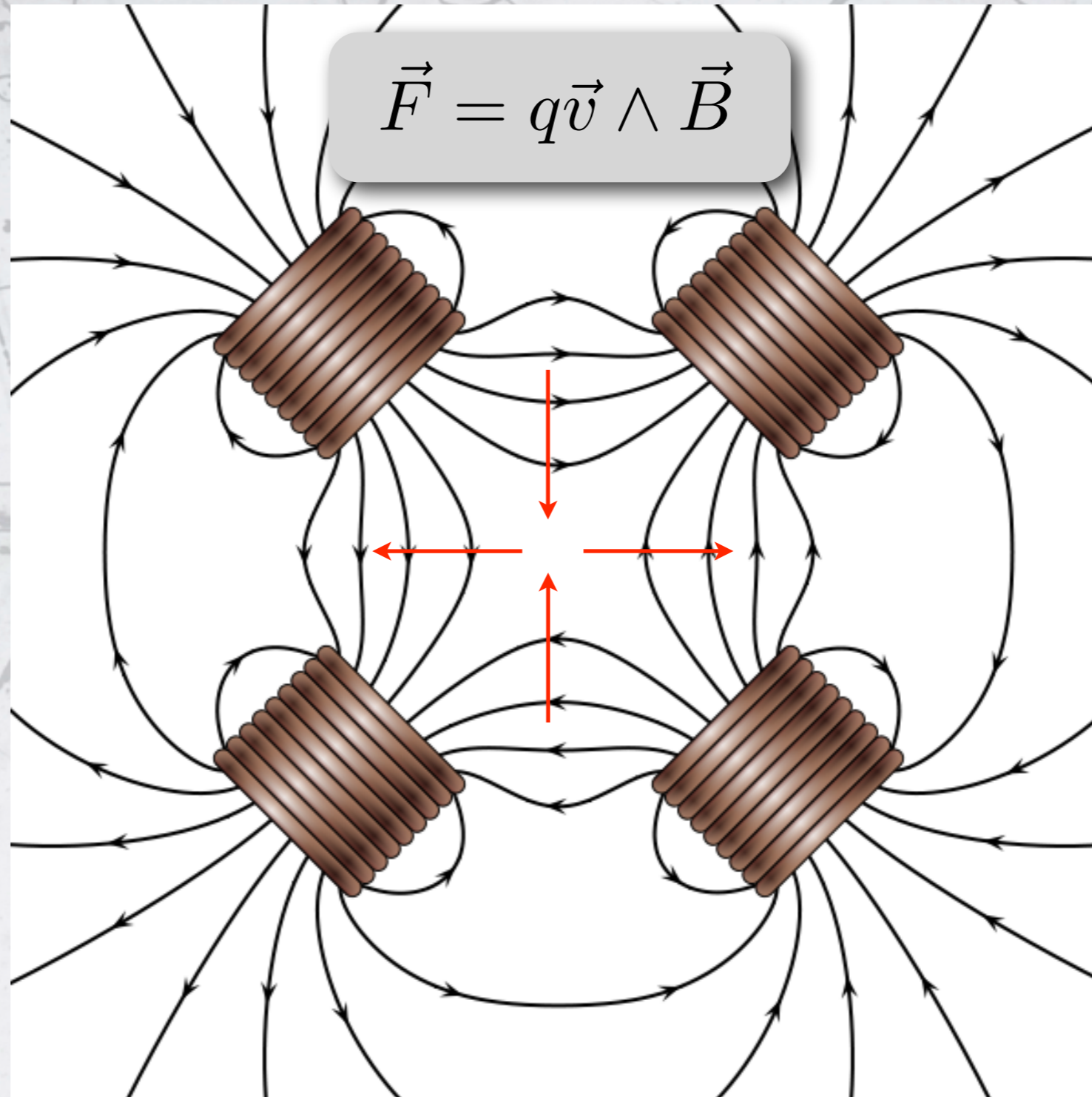
# FOCALIZZAZIONE



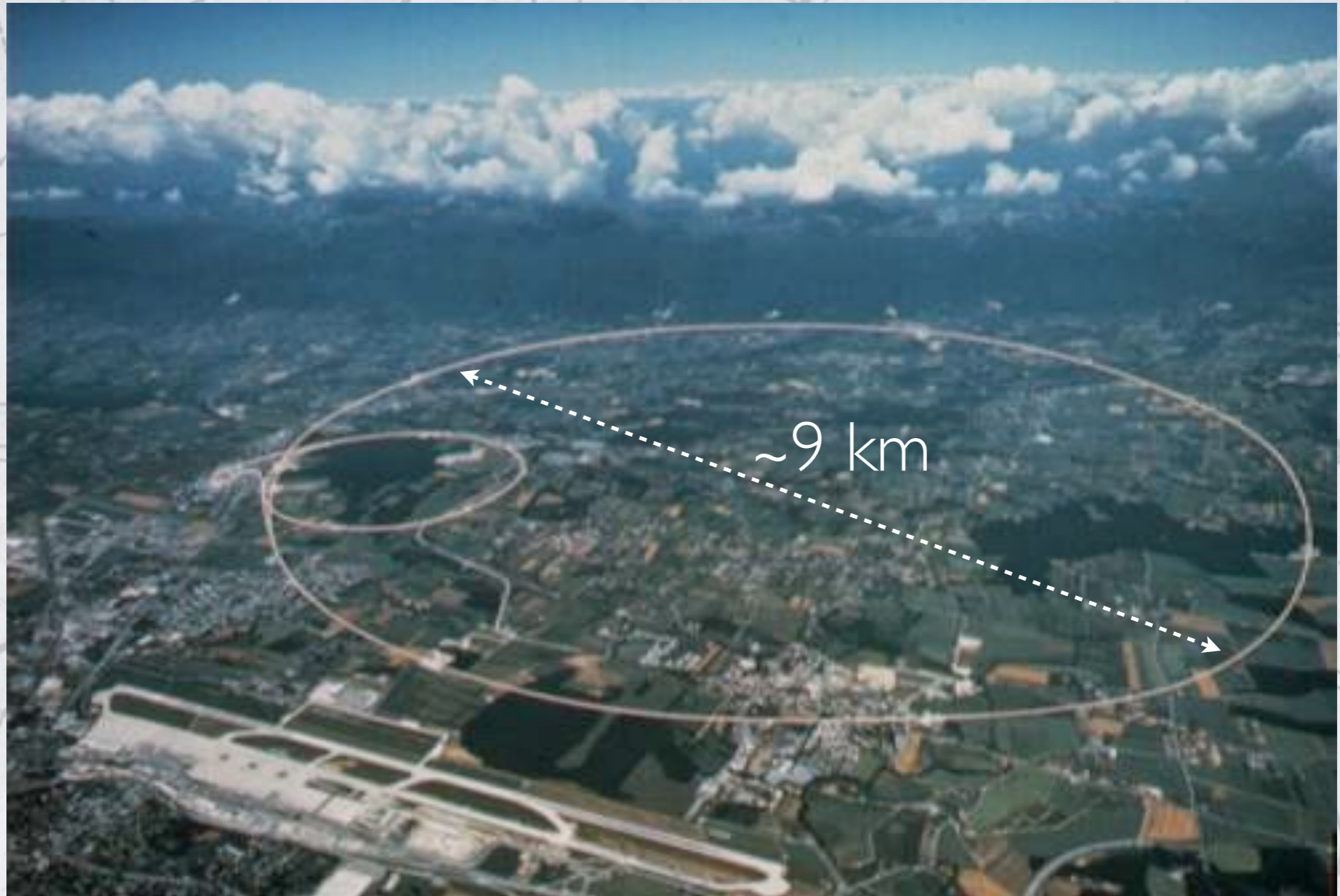
# QUADRUPOLI



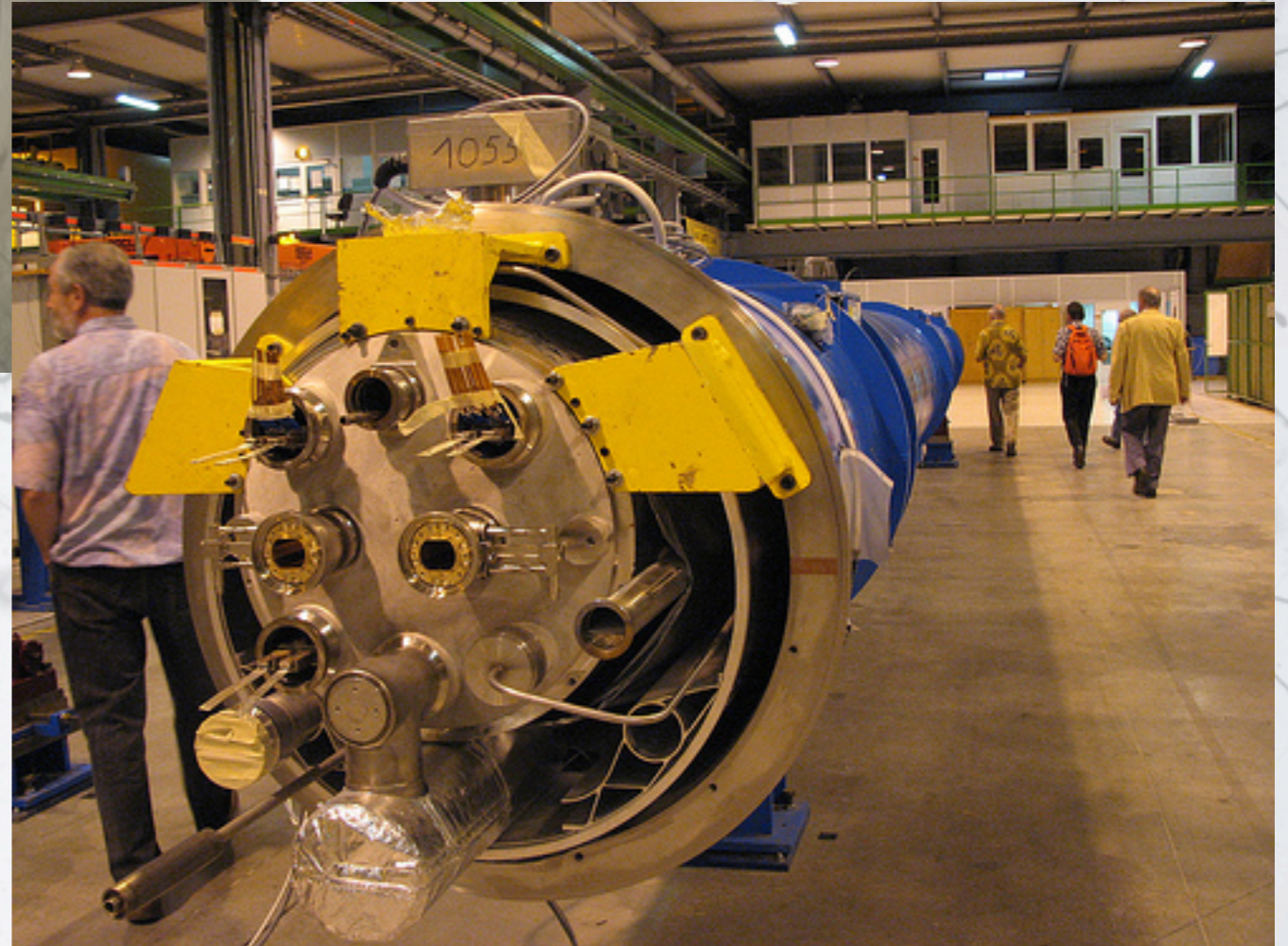
# QUADRUPOLI

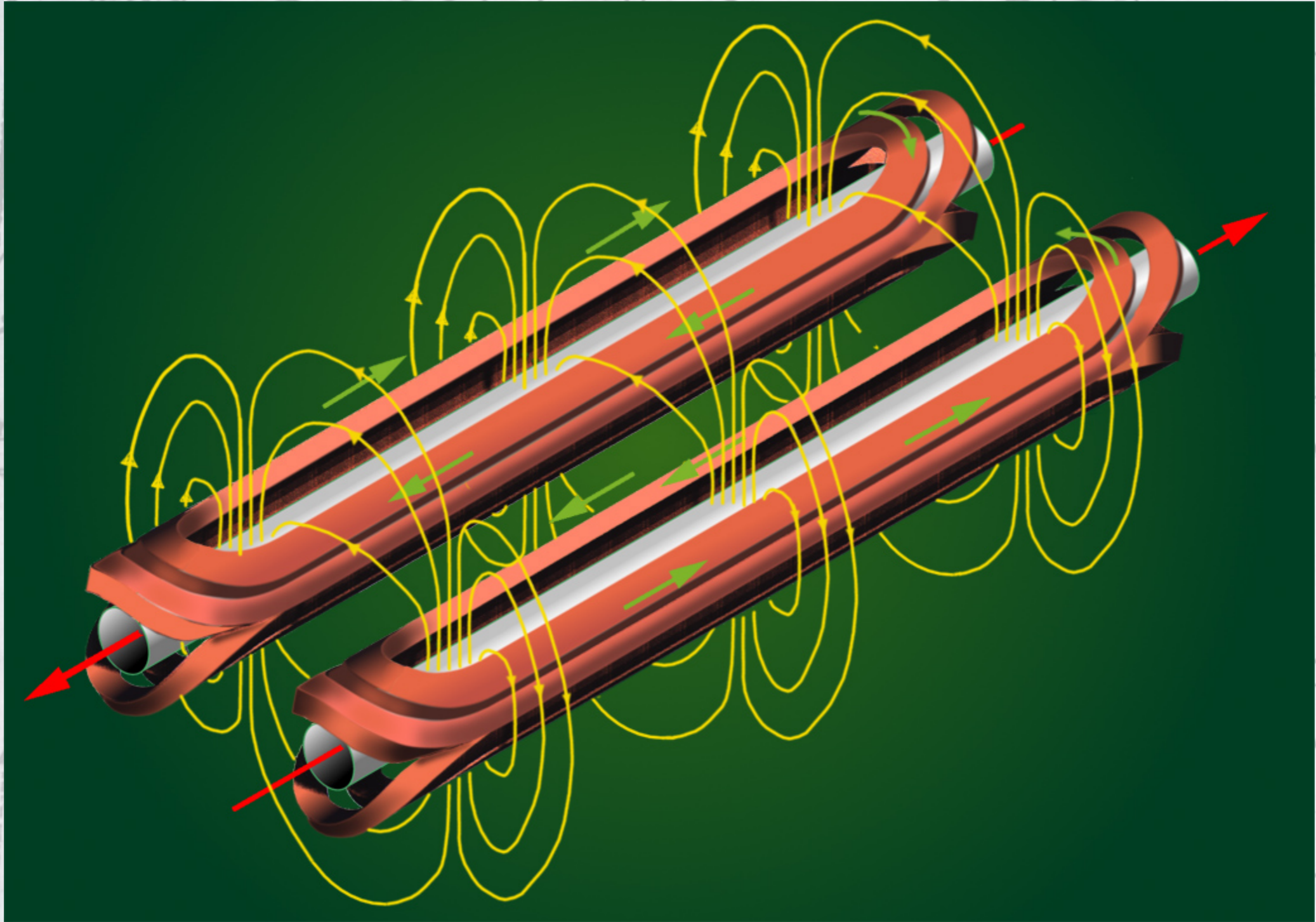


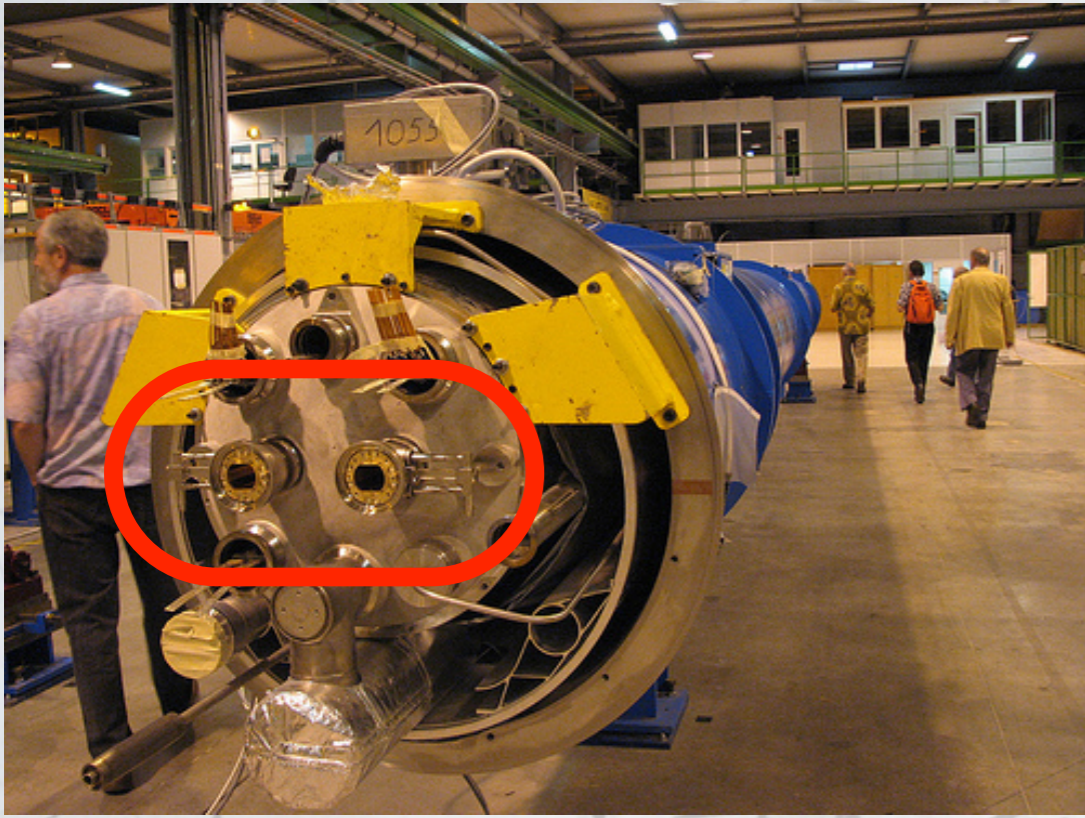
# LHC



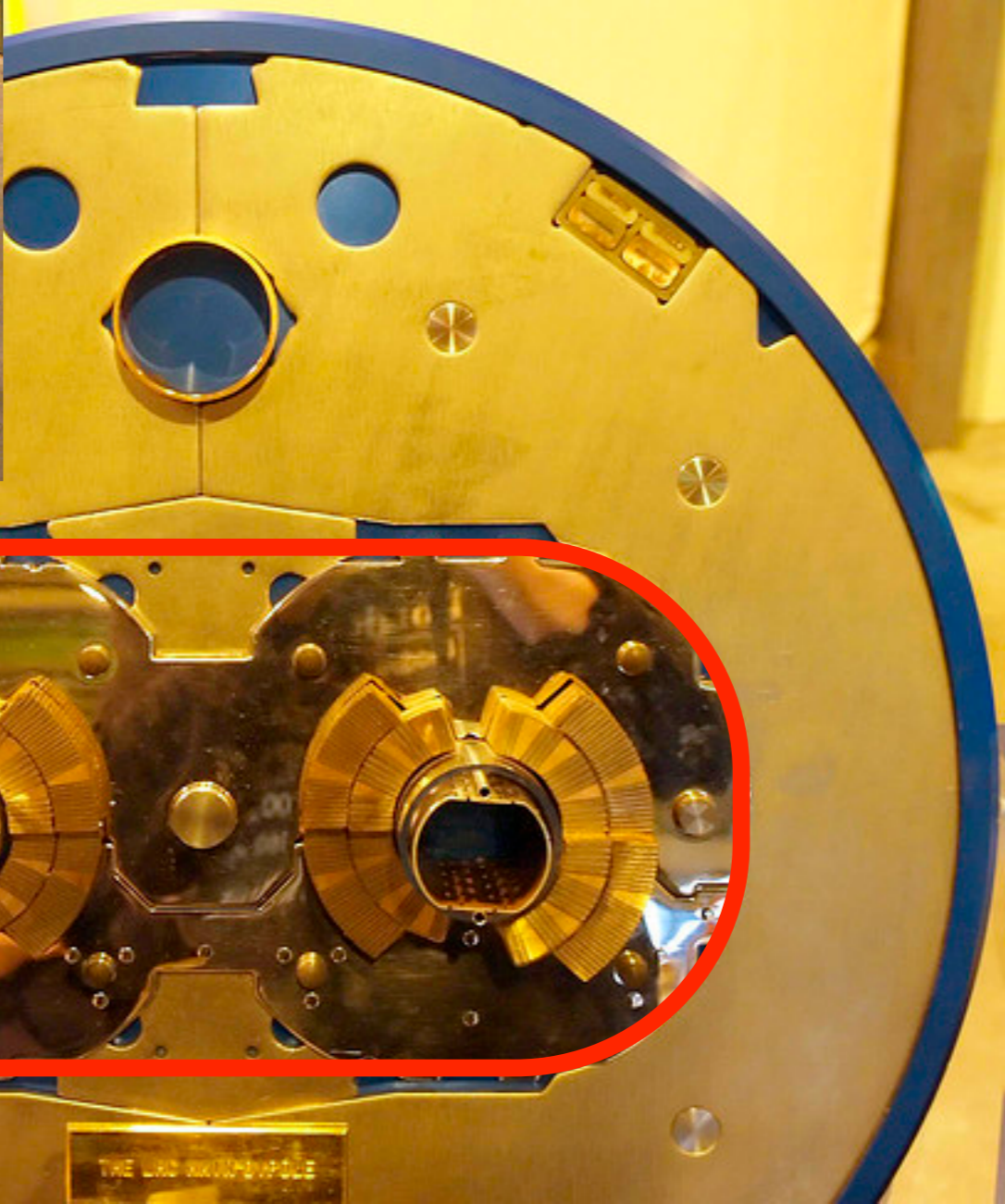
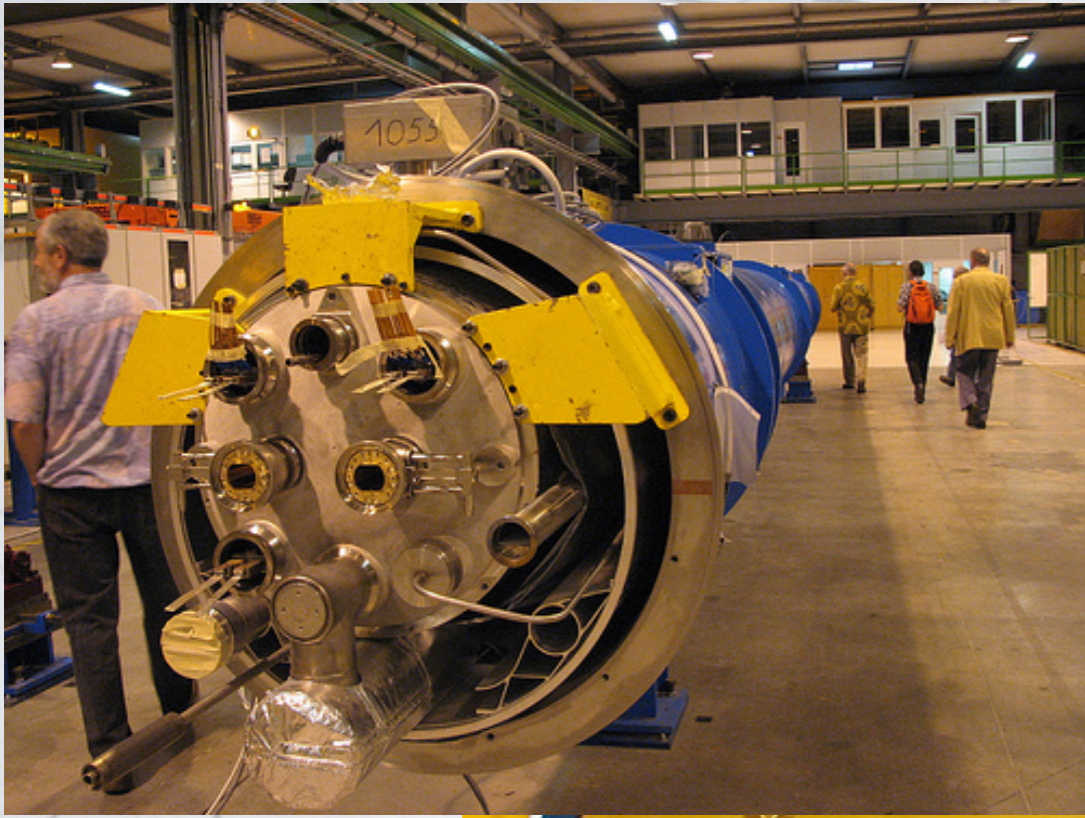
# LHC

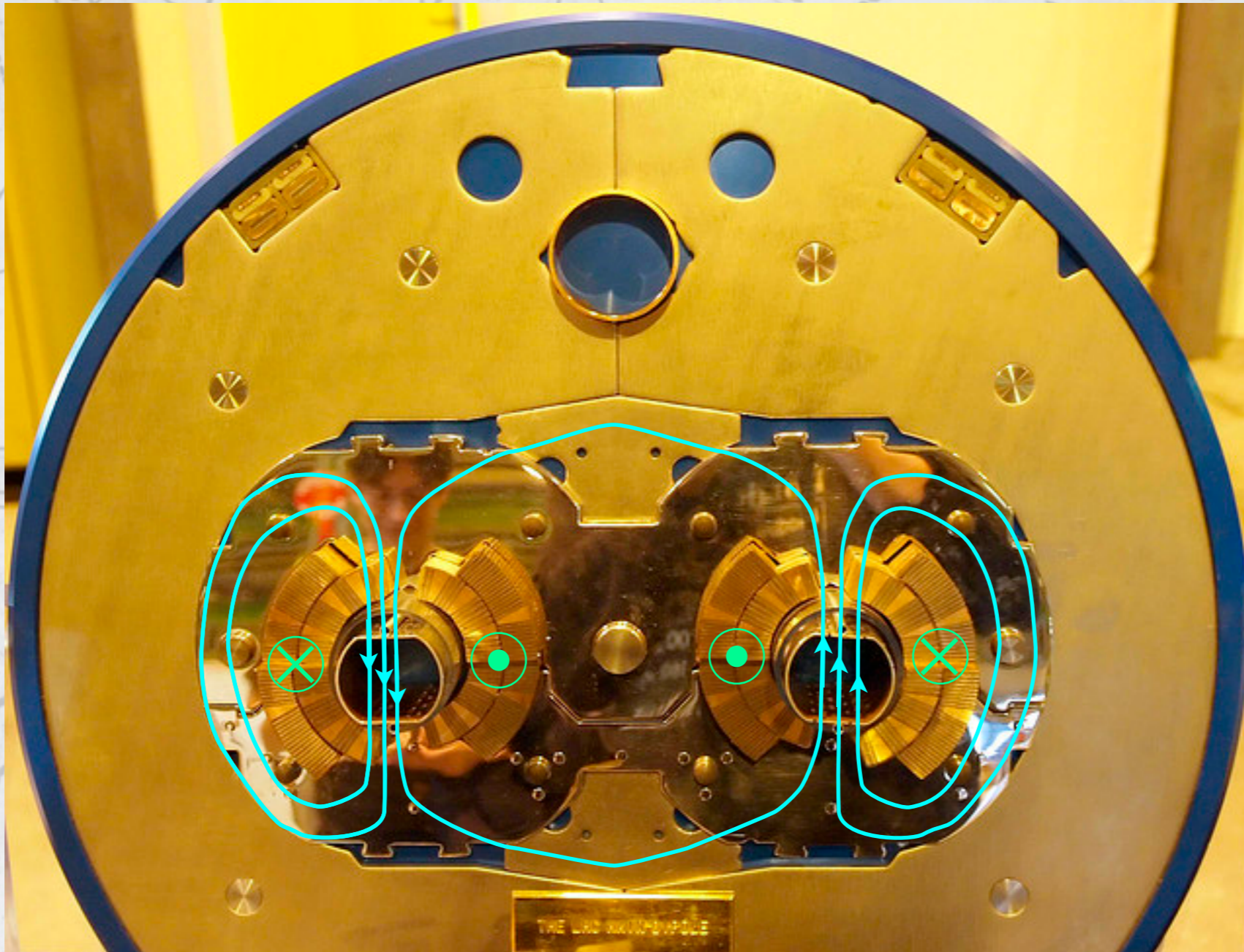






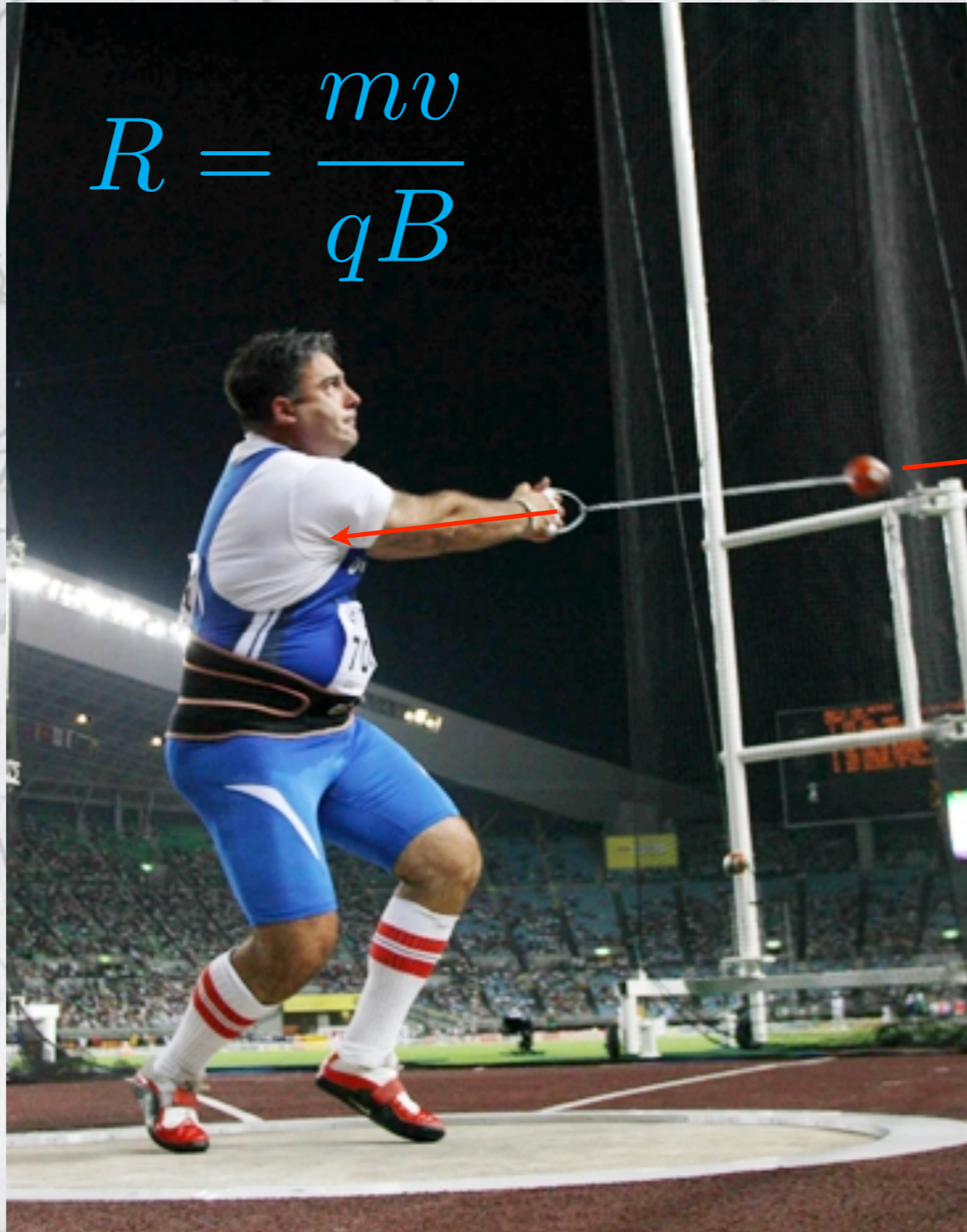






# LE DIMENSIONI DI LHC

$$R = \frac{mv}{qB}$$



# LA TEMPERATURA DI LHC

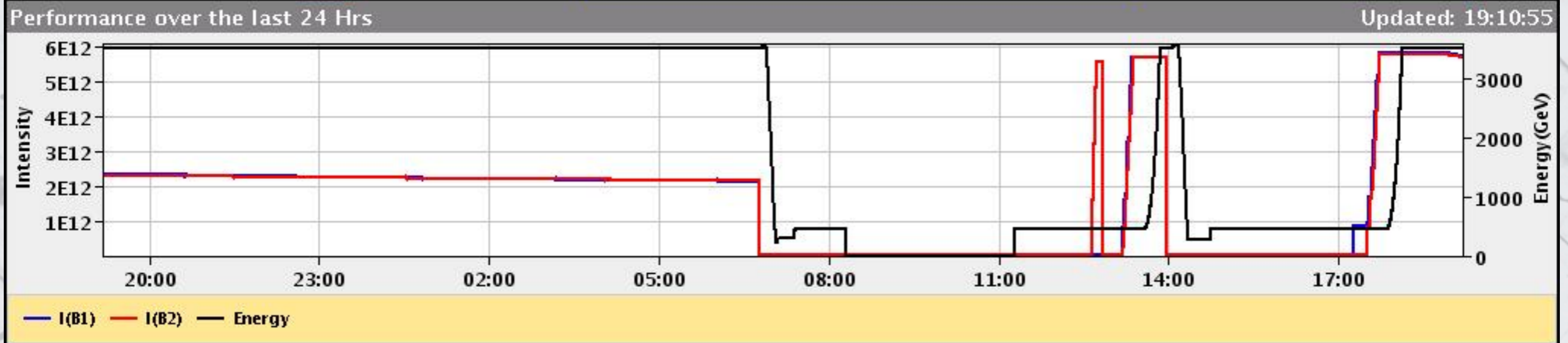
$$T_{LHC} = 1.9^{\circ}K$$

$$W = RI^2 = R \left( \frac{B}{\mu_0 n} \right)^2$$

# L'ENERGIA DI LHC

23-Sep-2010 19:11:05 Fill #: 1366 Energy: 3500 GeV I(B1): 5.75e+12 I(B2): 5.73e+12

	ATLAS	ALICE	CMS	LHCb
Experiment Status	STANDBY	NOT READY	STANDBY	STANDBY
Instantaneous Lumi (ub.s) <sup>-1</sup>	20.007	0.304	20.380	18.621
BRAN Luminosity (ub.s) <sup>-1</sup>	18.297	0.345	8.214	16.075
Fill Luminosity (nb) <sup>-1</sup>	0.3	--	0.1	0.0
BKGD 1	0.000	0.013	34.354	0.254
BKGD 2	32.000	2.058	0.002	5.466
BKGD 3	6.000	0.008	0.000	0.136
LHCb VELO Position	OUT	Gap: 58.0 mm	STAB...	TOTEM: STANDBY



×

×

$1.6 \cdot 10^{-19} \text{ J} \approx 0.6 \text{ MJ}$

# L'ENERGIA CHE



8.5 m



# L'ENERGIA DI LHC

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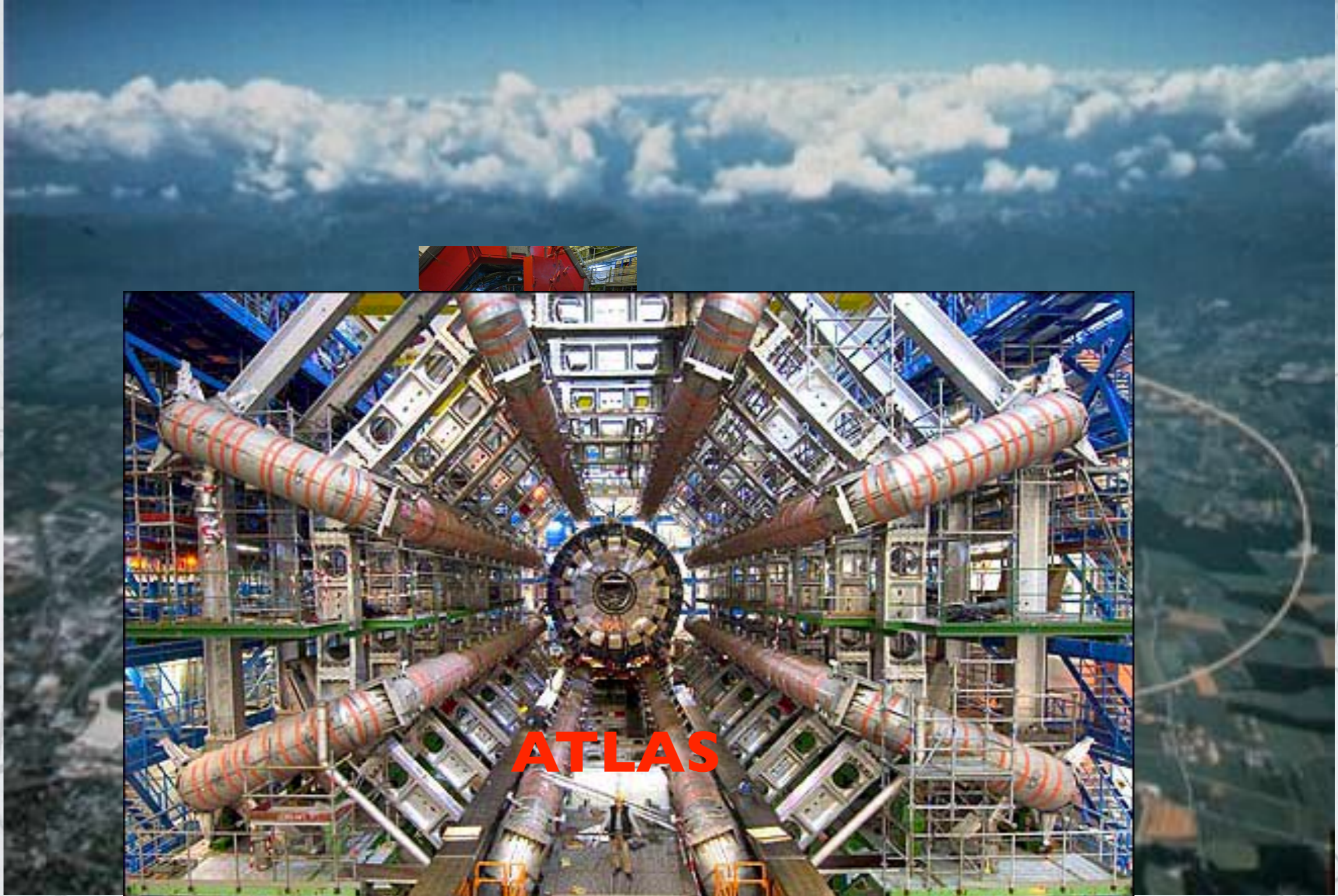
# GLI ESPERIMENTI

**ALICE**



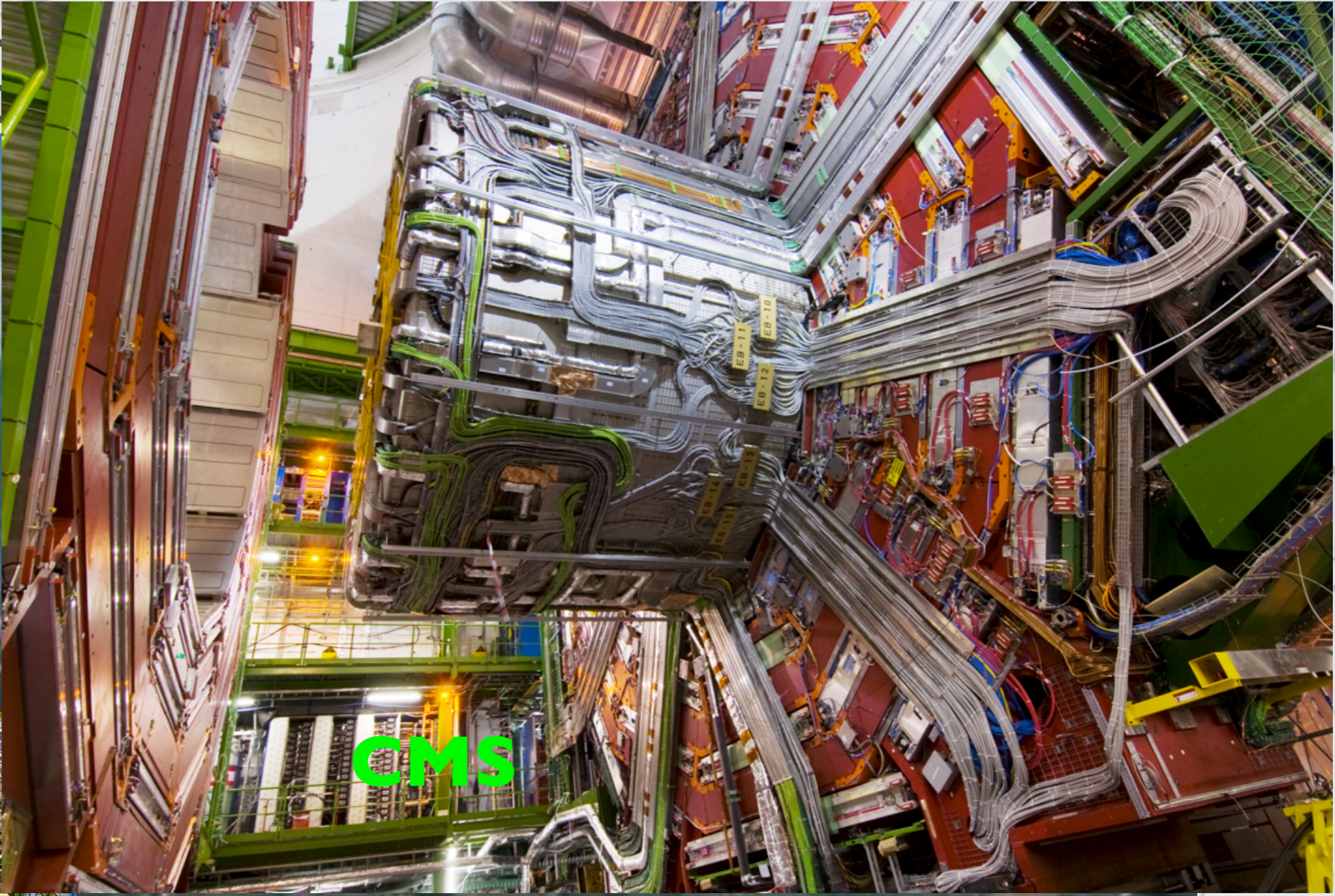
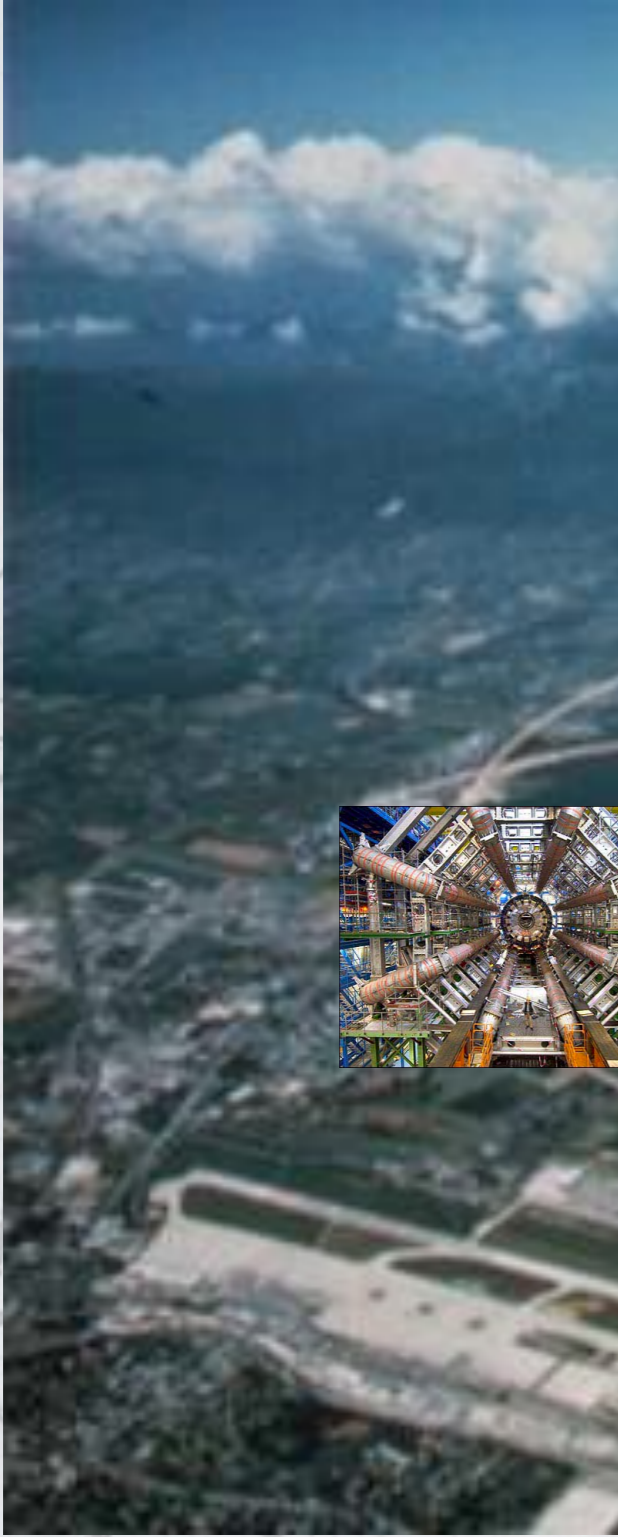


# GLI ESPERIMENTI

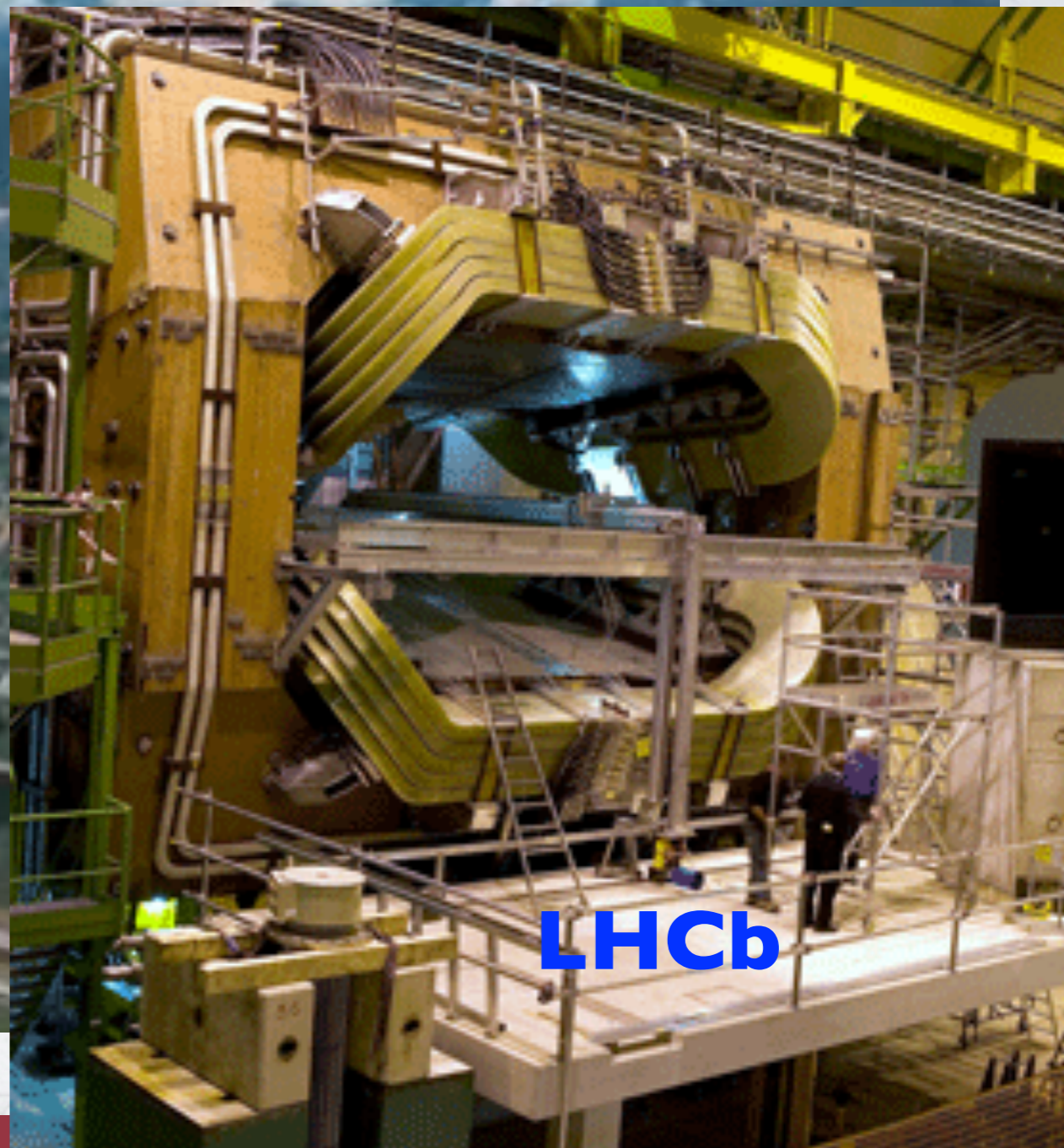
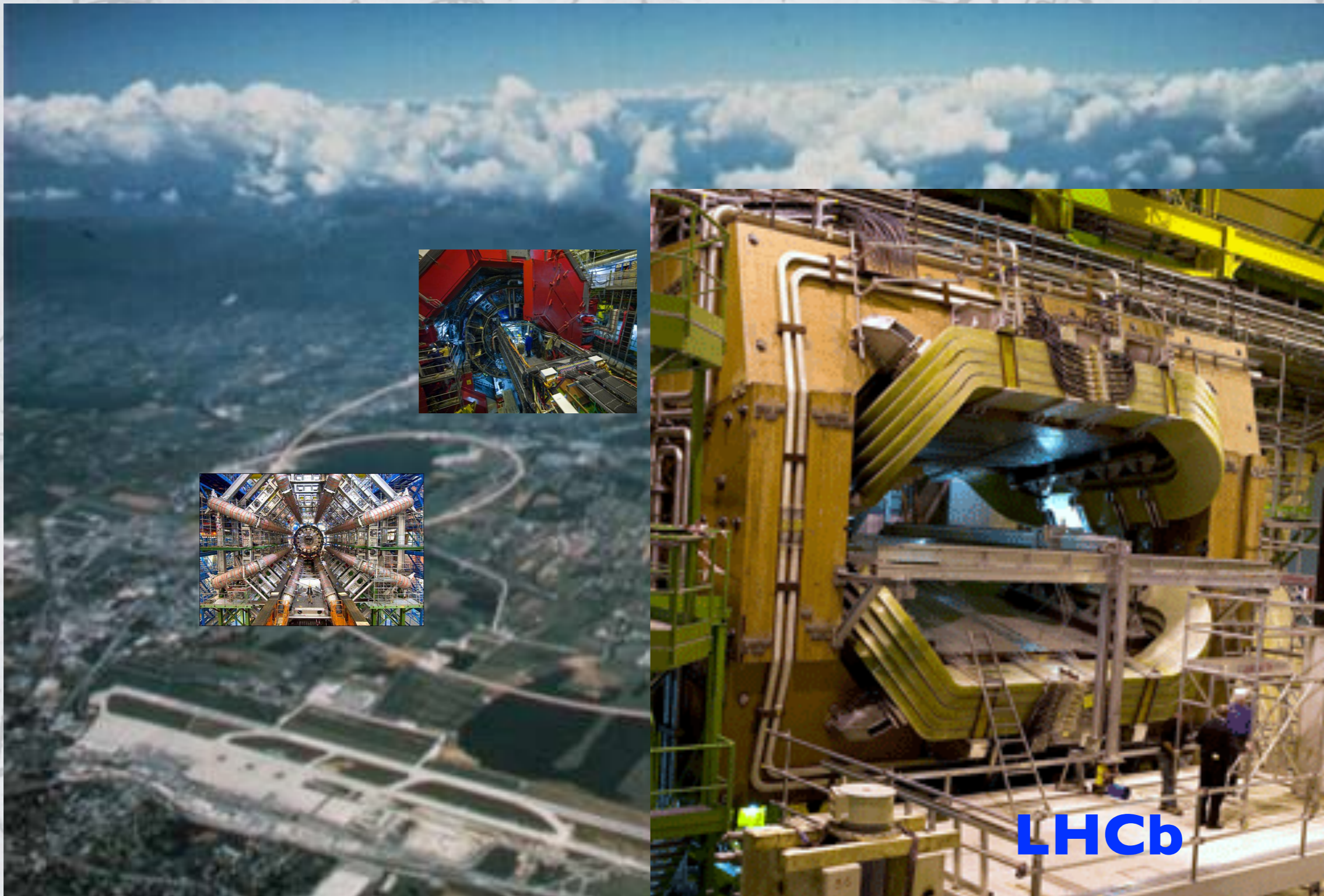


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# GLI ESPERIMENTI



# GLI ESPERIMENTI

