

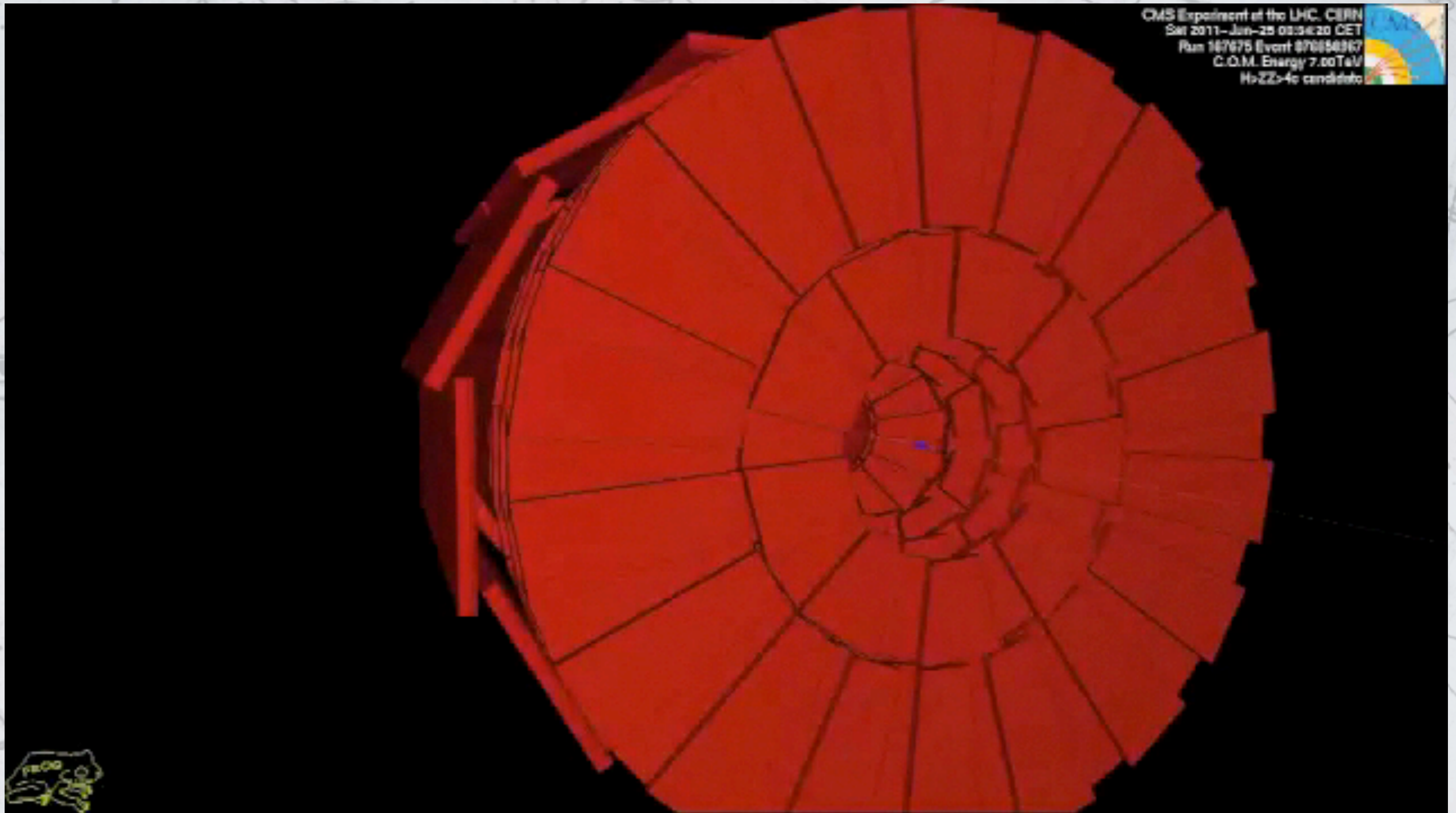
ACCELERATORI E RIVELATORI

Giovanni Organtini

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

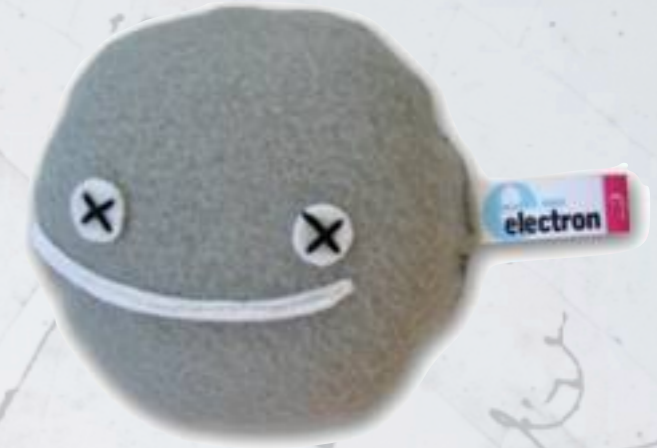


FISICA AI COLLIDER





LE PARTICELLE

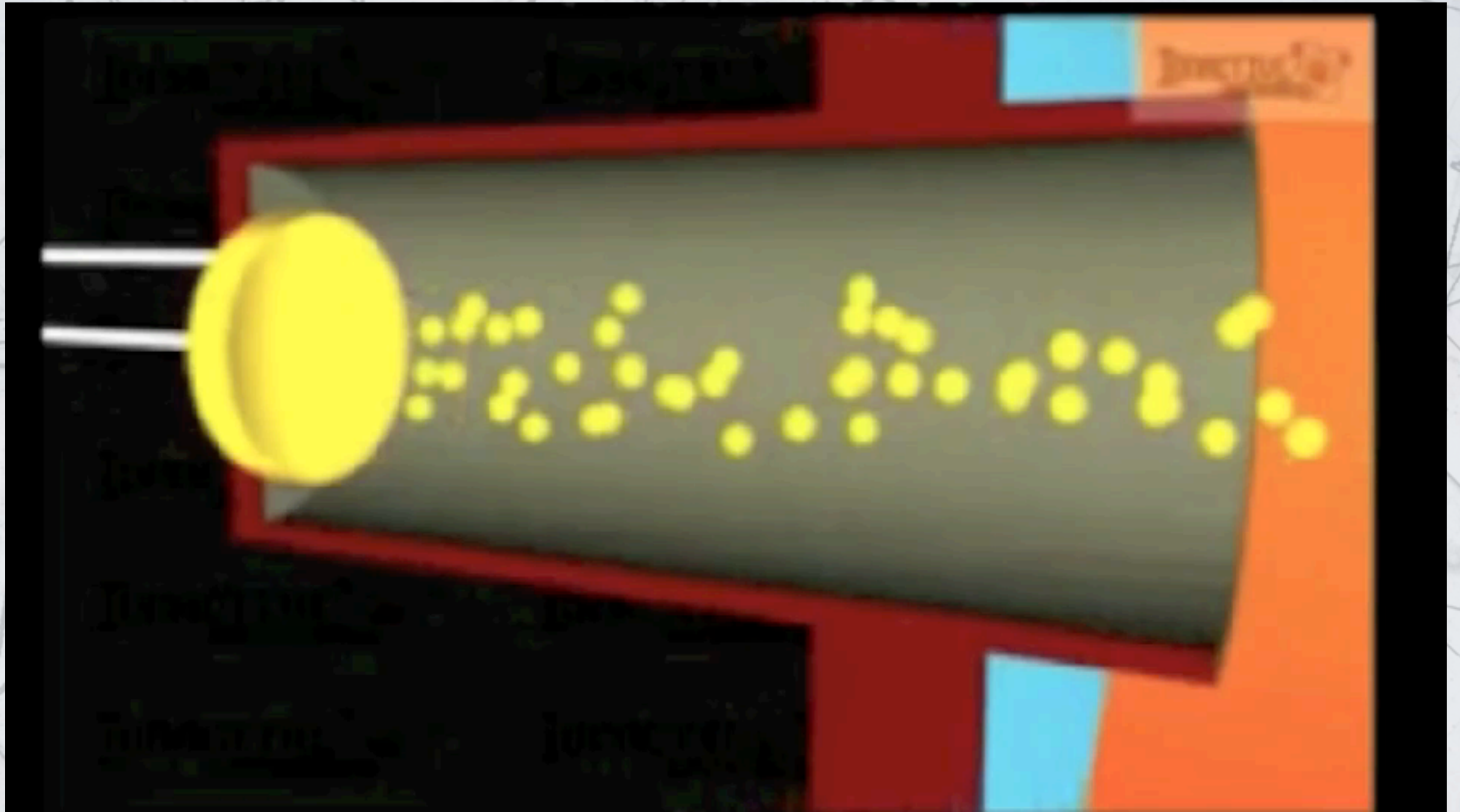


$$\vec{F} = q \left(\vec{E} + \vec{v} \times \vec{B} \right)$$

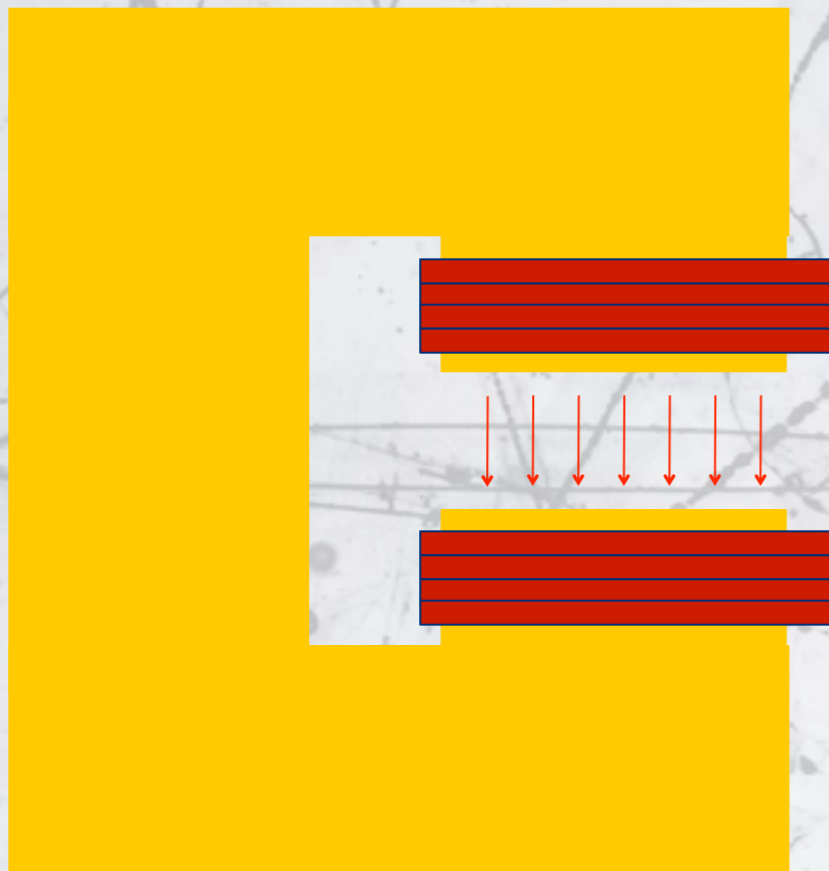
L'ACCELERATORE



GUIDE D'ONDA

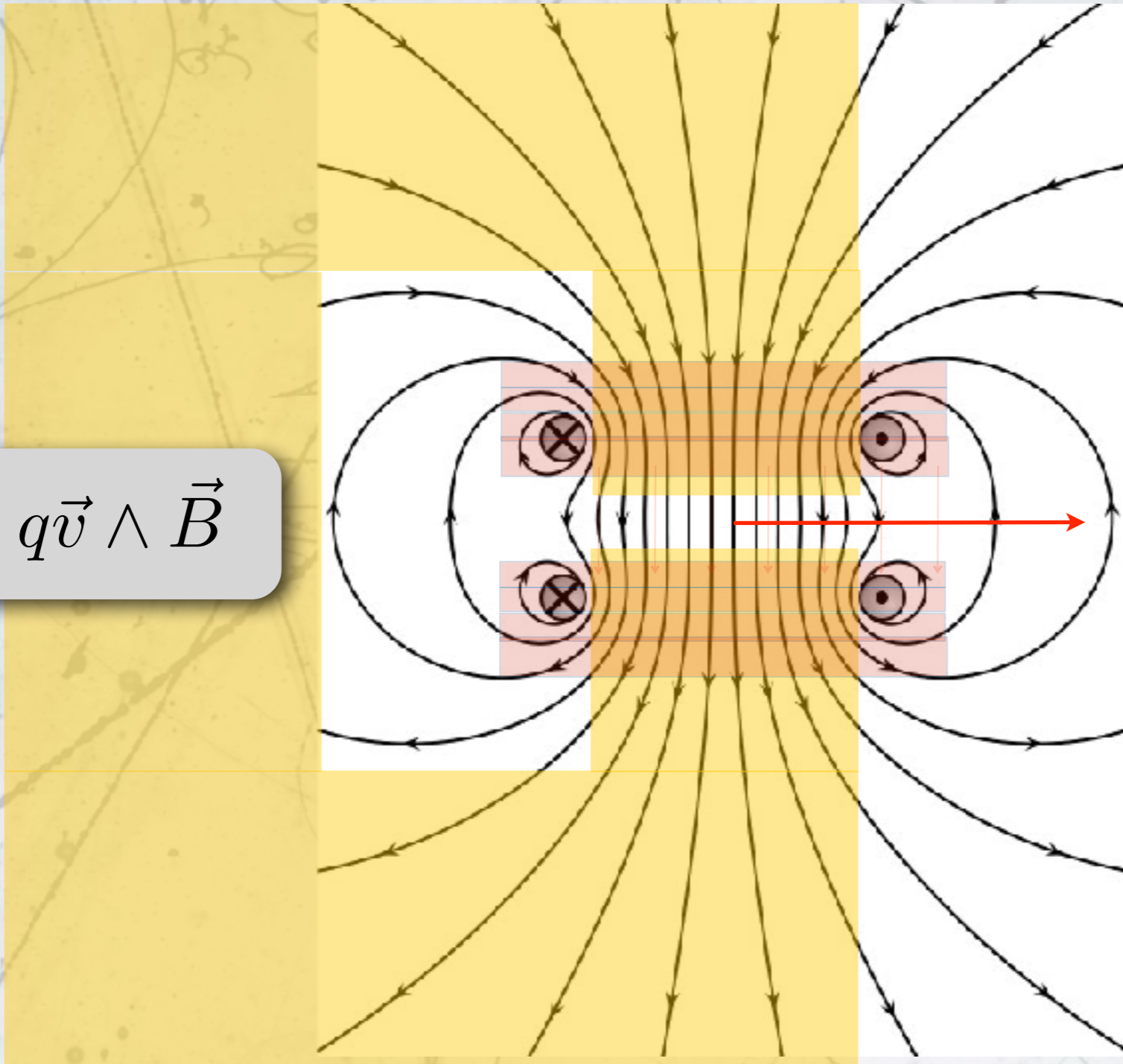


GUIDA

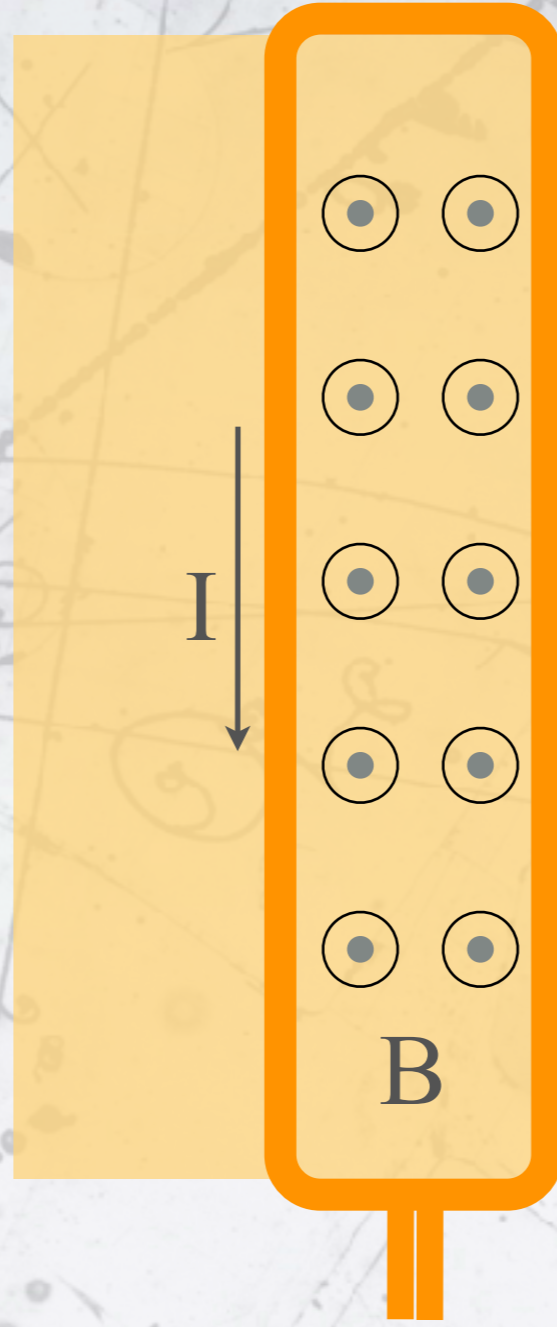


MAGNETI DEFLETTORI

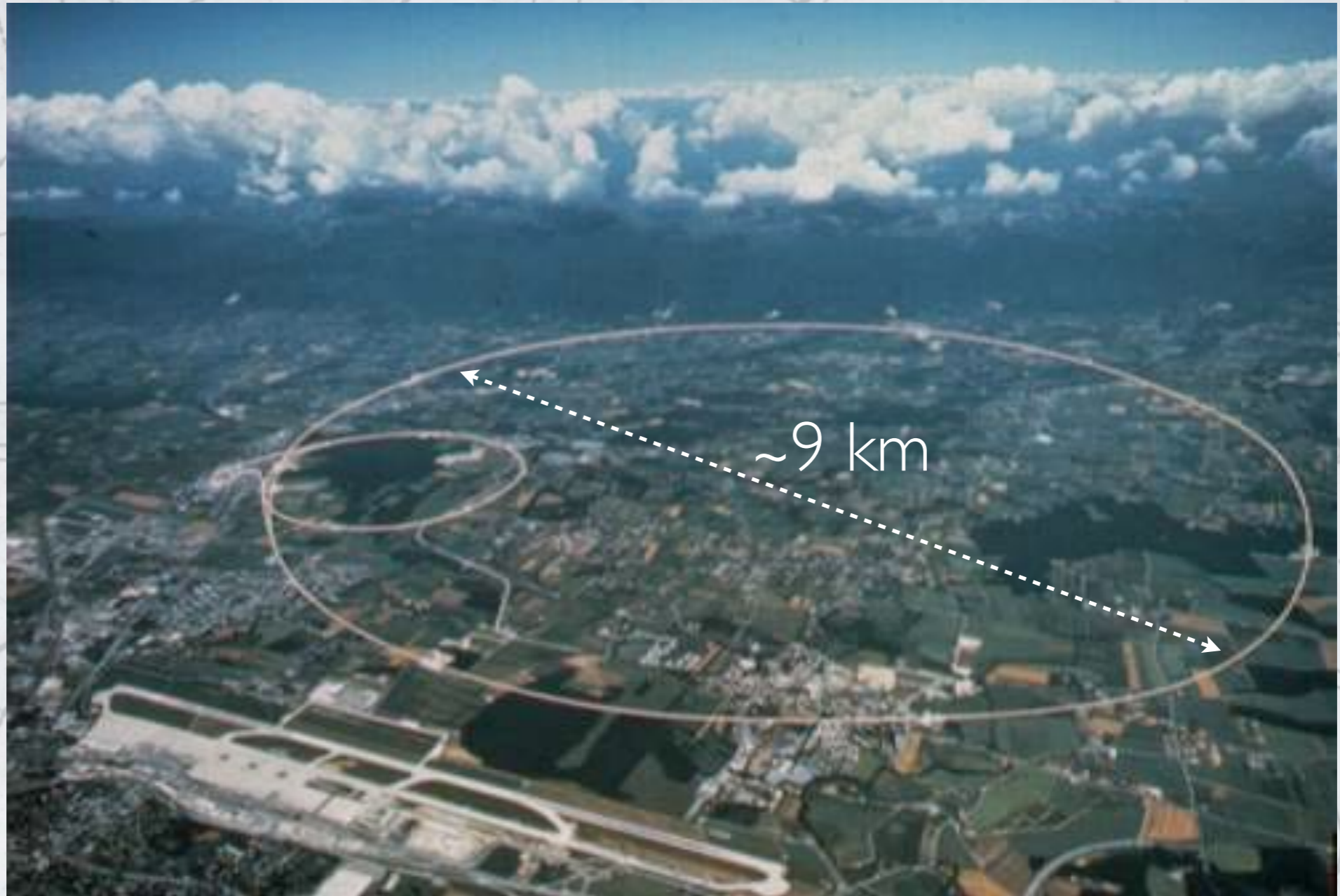
$$\vec{F} = q\vec{v} \wedge \vec{B}$$



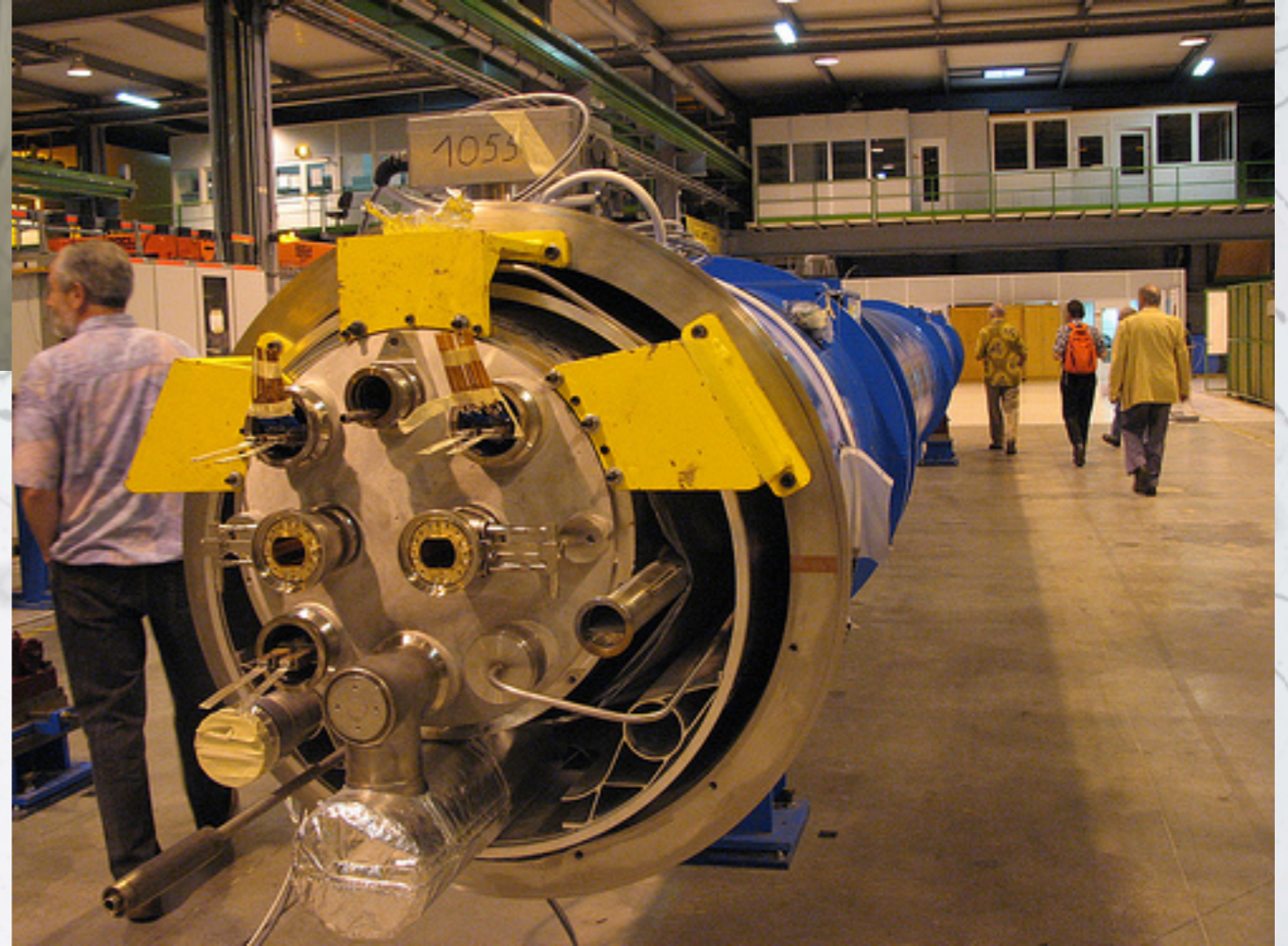
$$\vec{B} = \mu_0 n I \hat{z}$$

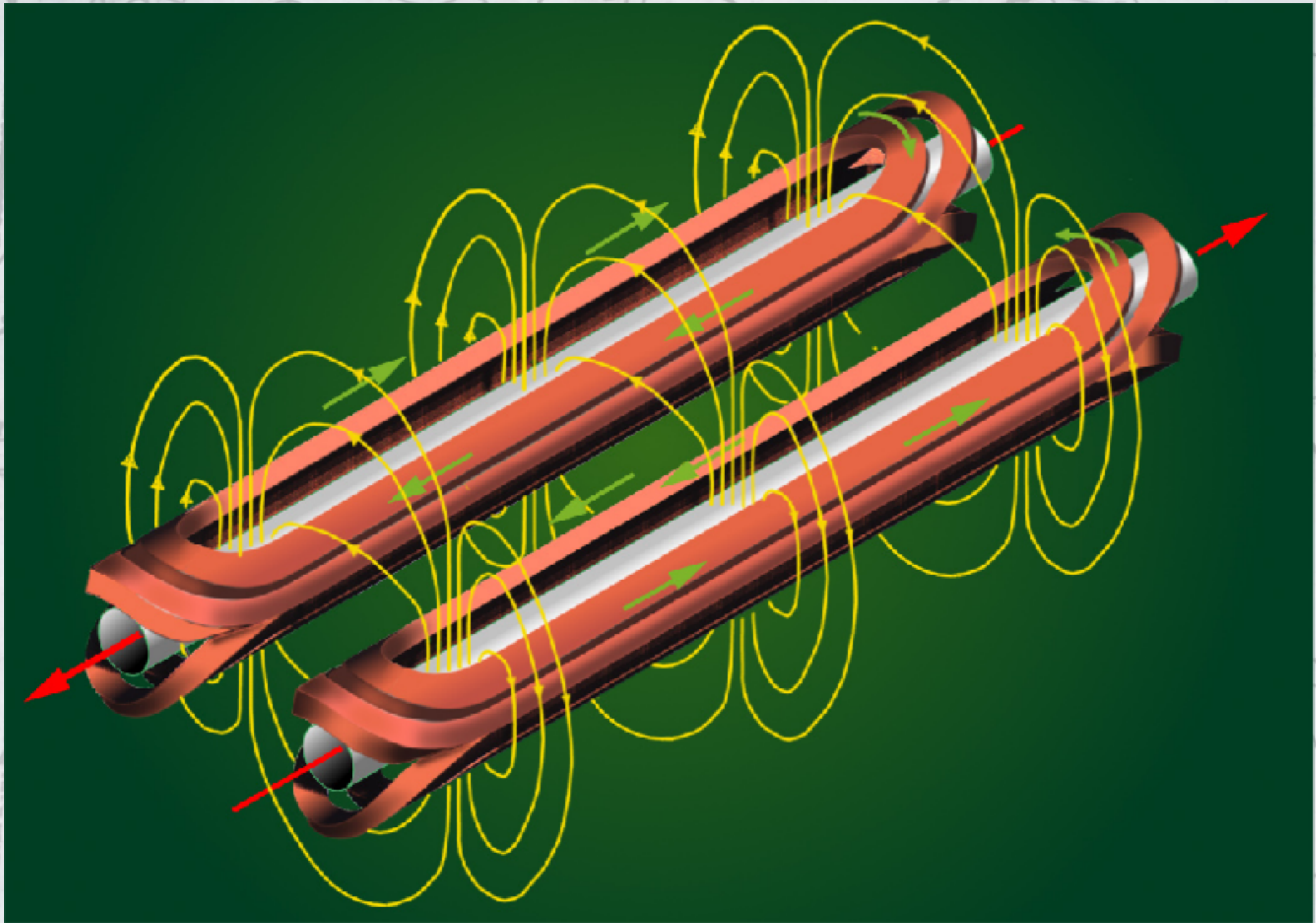


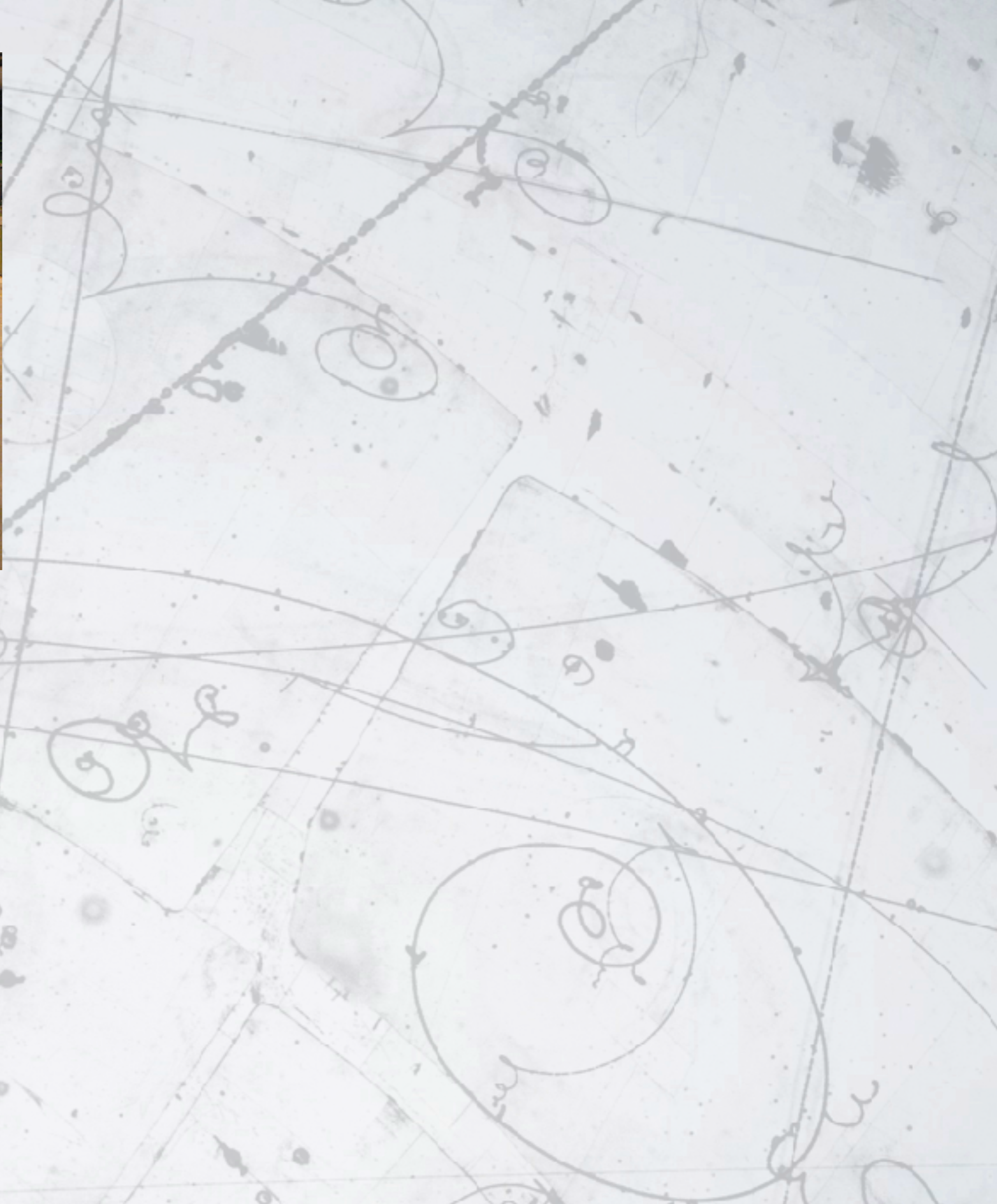
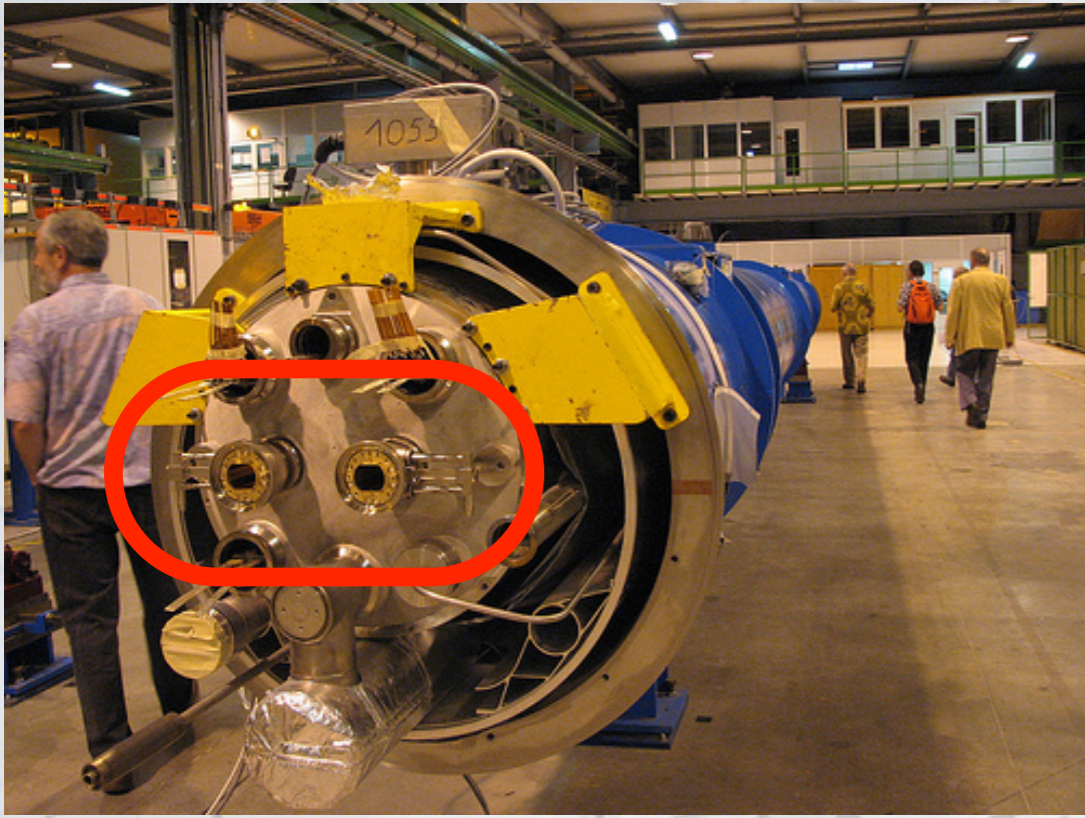
LHC

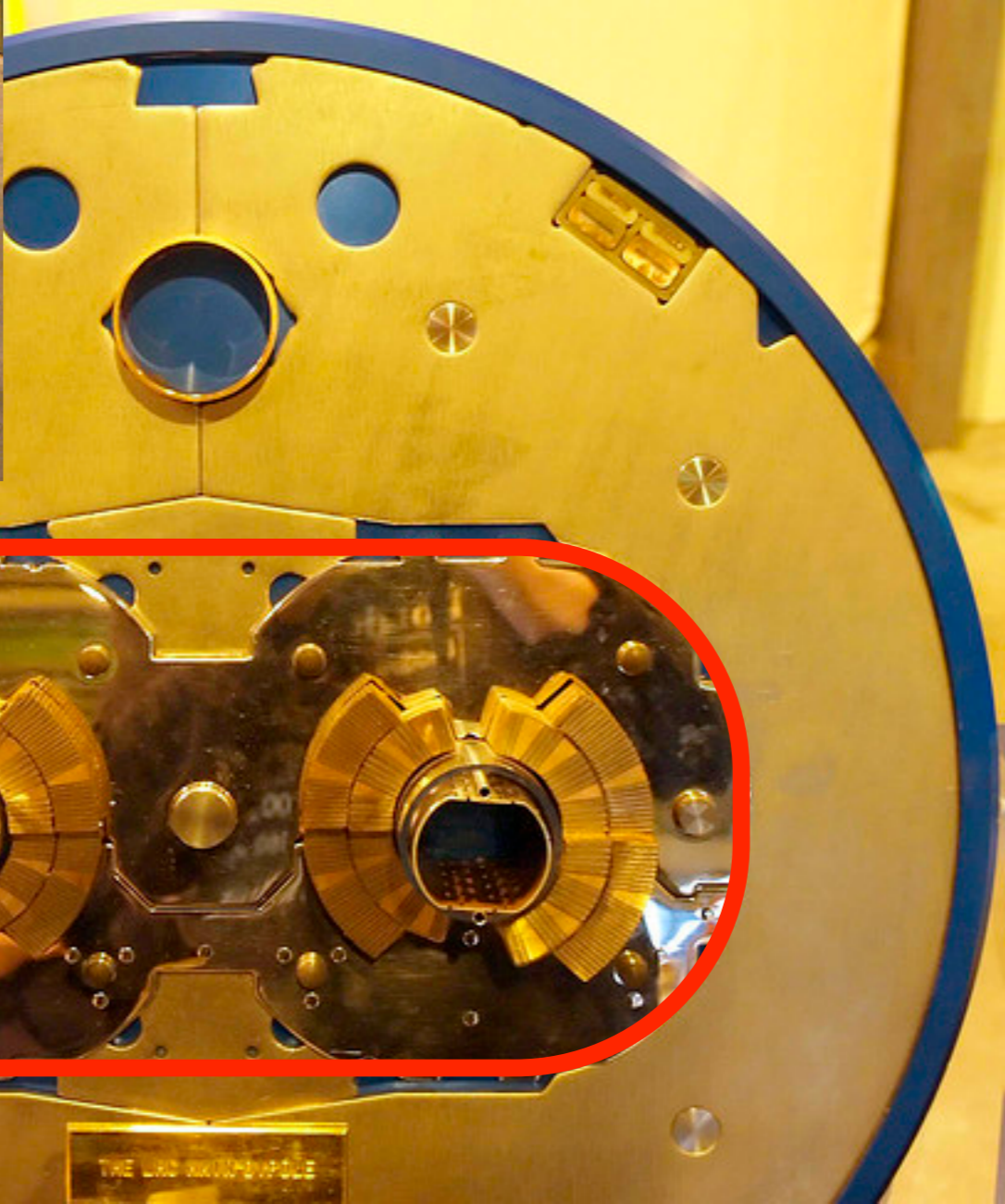
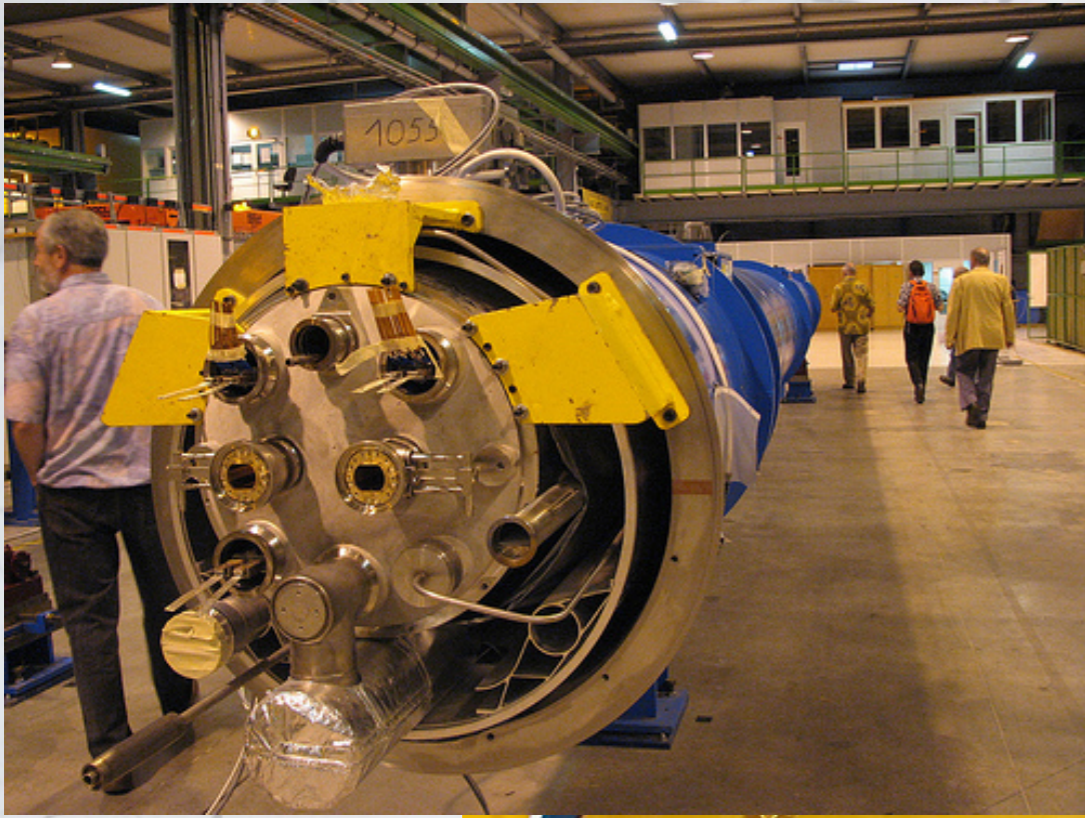


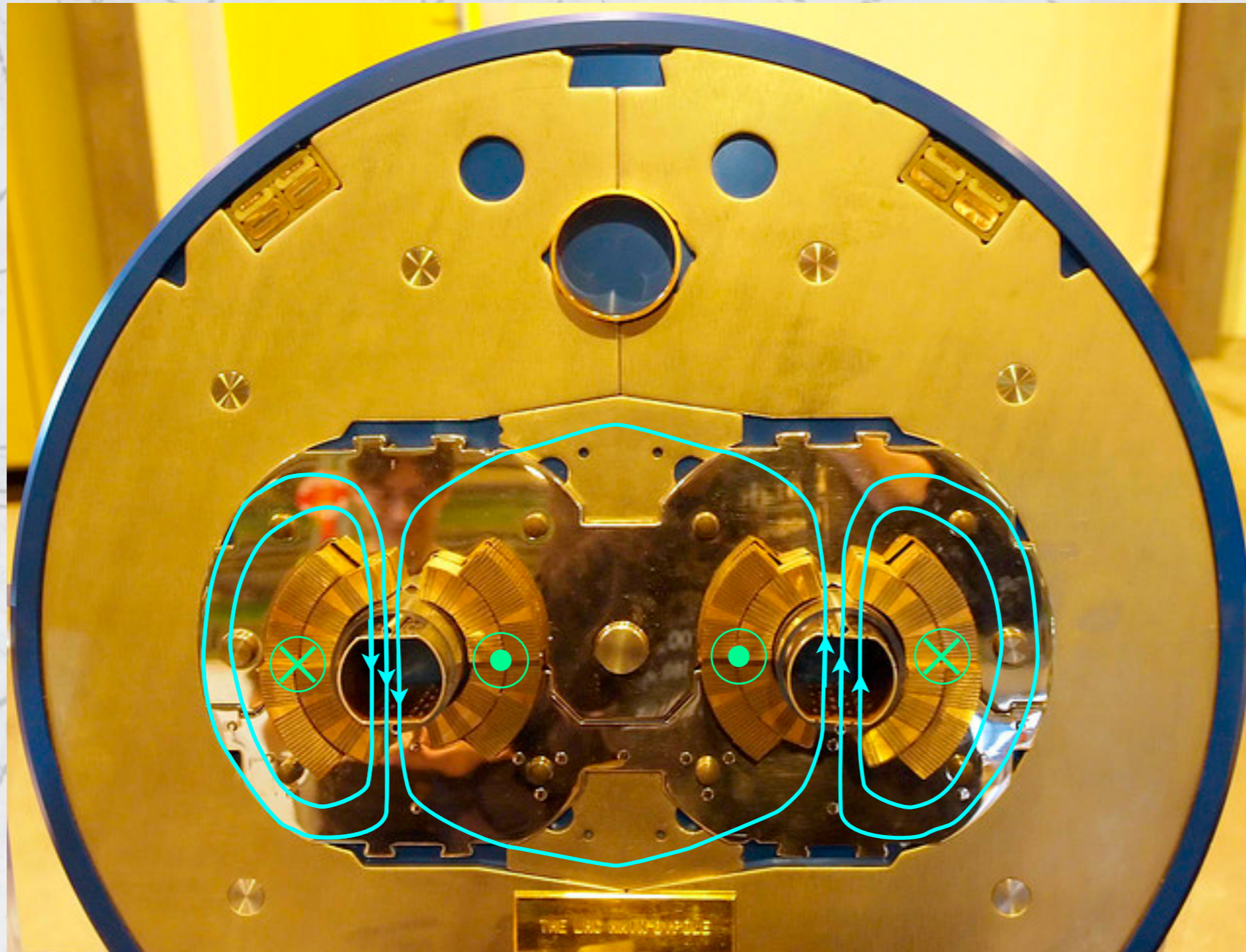
LHC





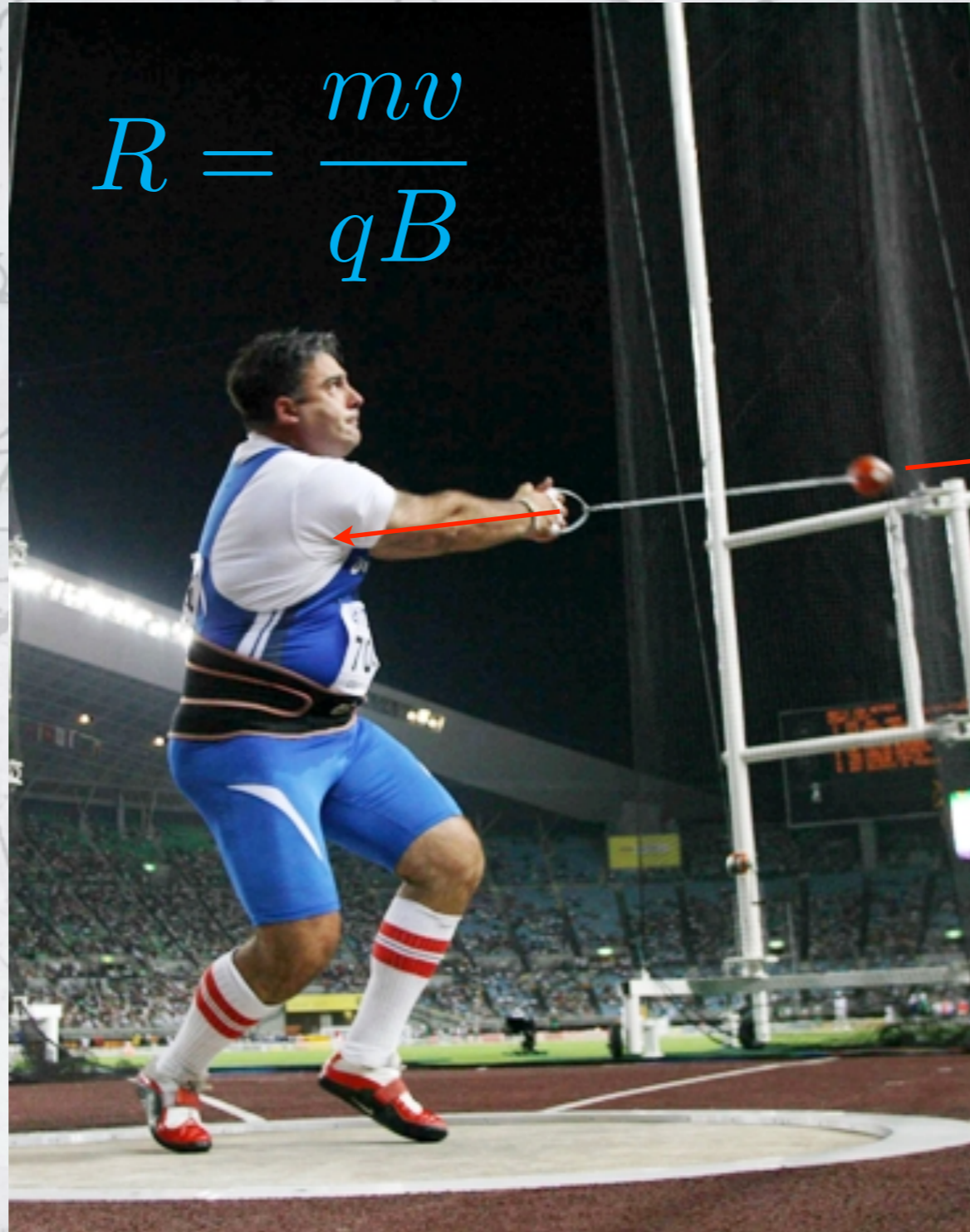






LE DIMENSIONI DI LHC

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



LA TEMPERATURA DI LHC

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

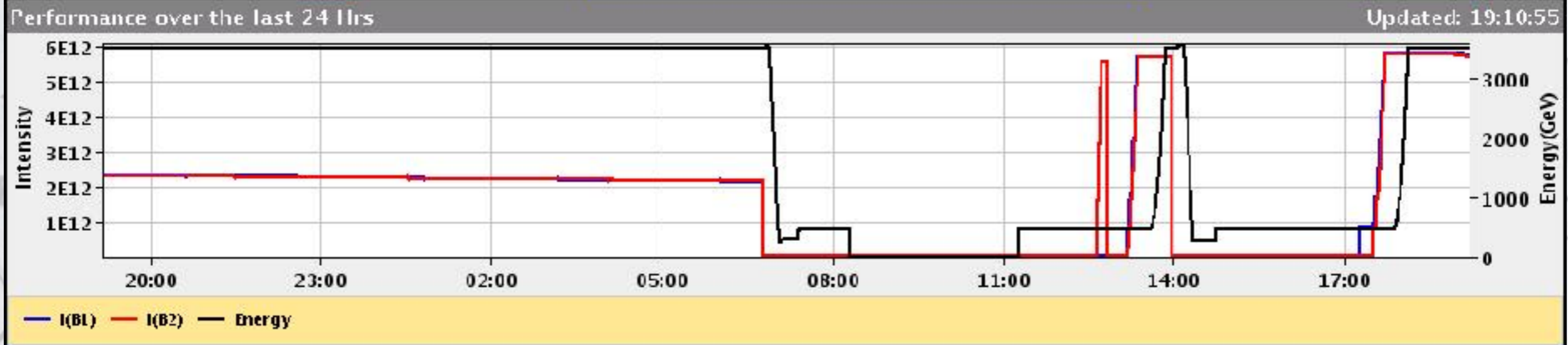
$$W = RI^2 = R \left(\frac{B}{\mu_0 n} \right)^2$$

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) ⁻¹	20.007	0.304	20.380	18.621
BRAN Luminosity (ub.s) ⁻¹	18.297	0.345	8.214	16.075
Fill Luminosity (nb) ⁻¹	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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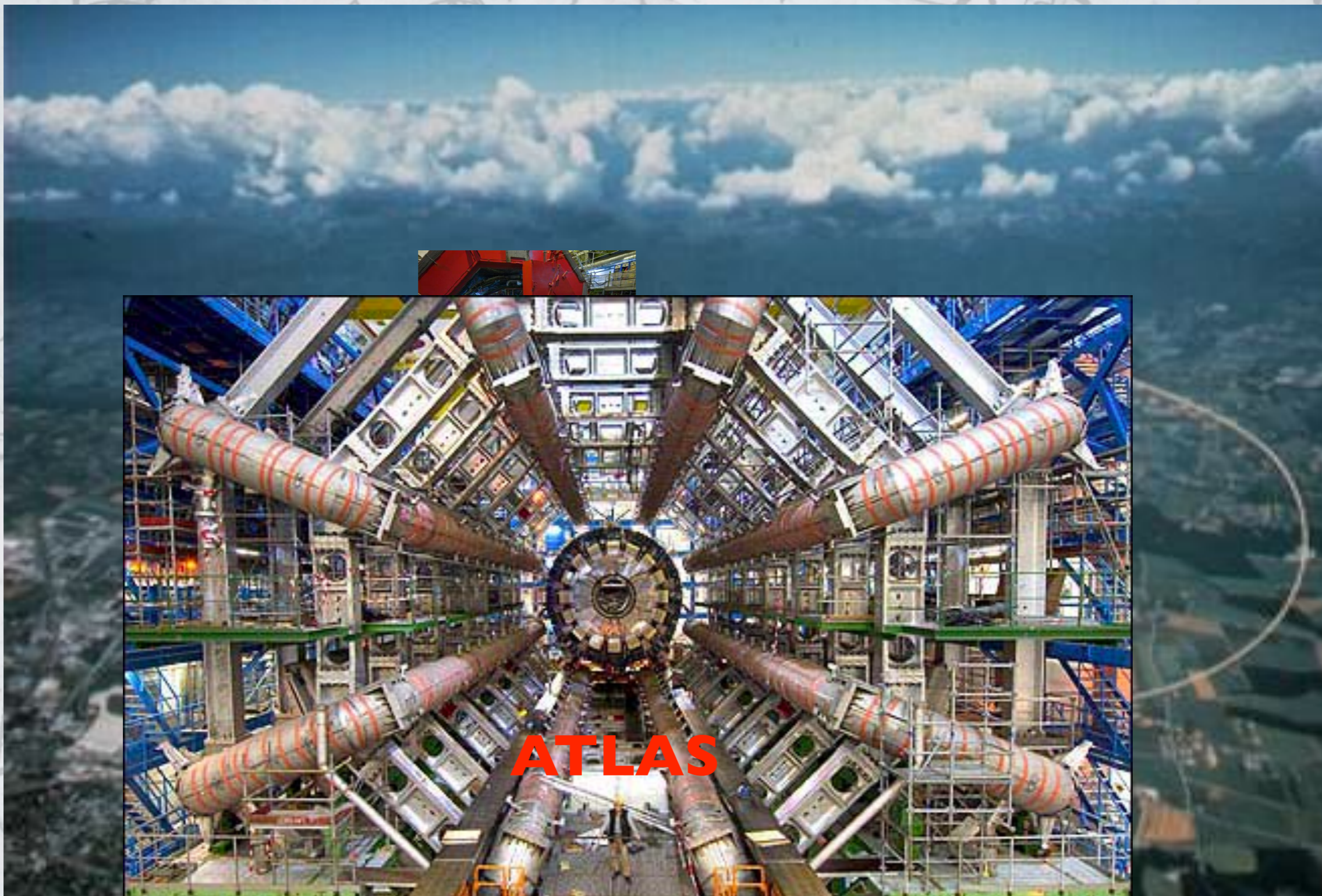


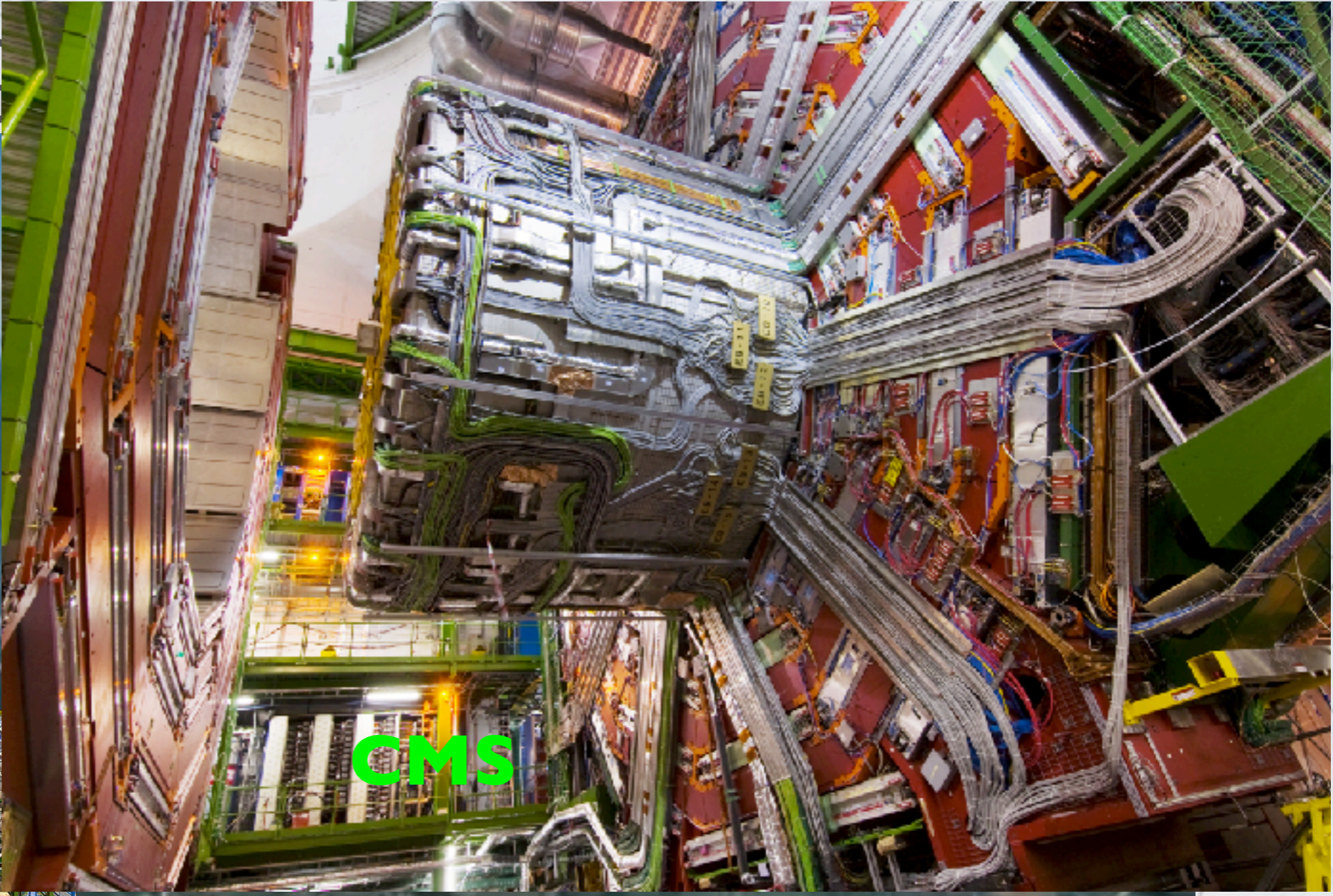
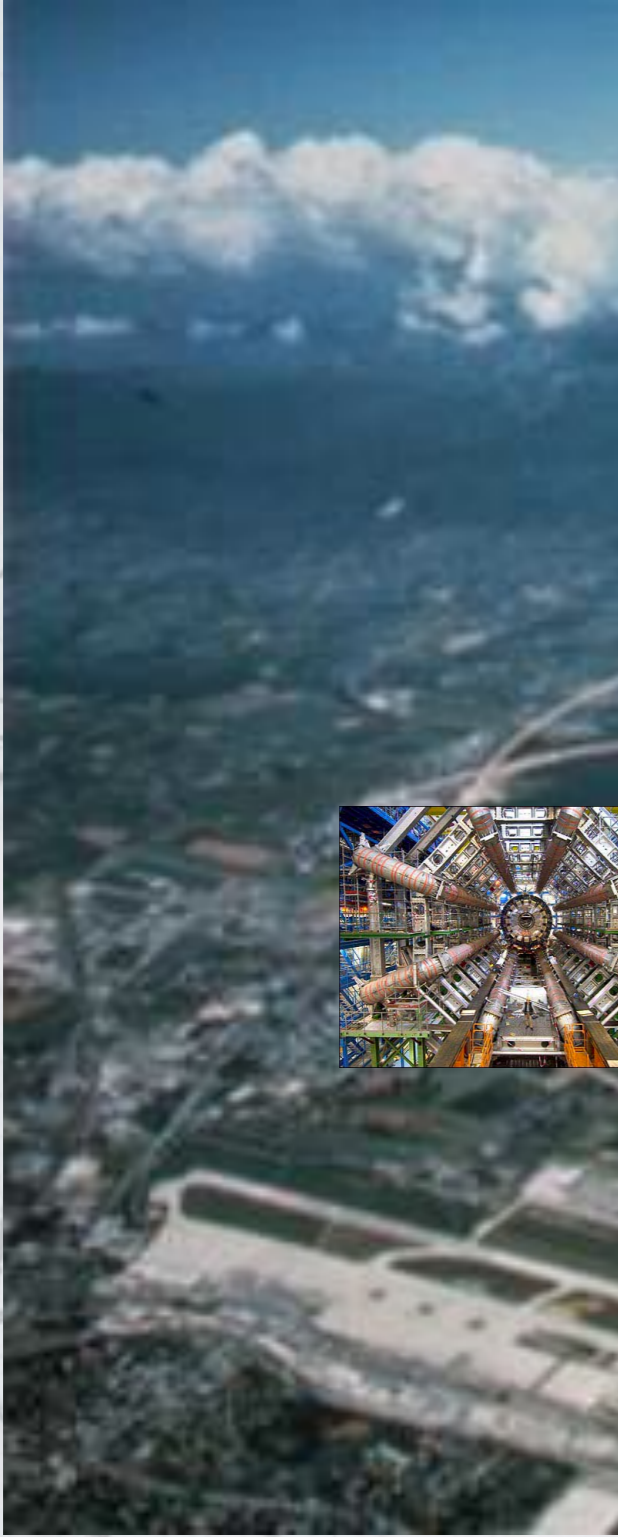
GLI ESPERIMENTI

ALICE

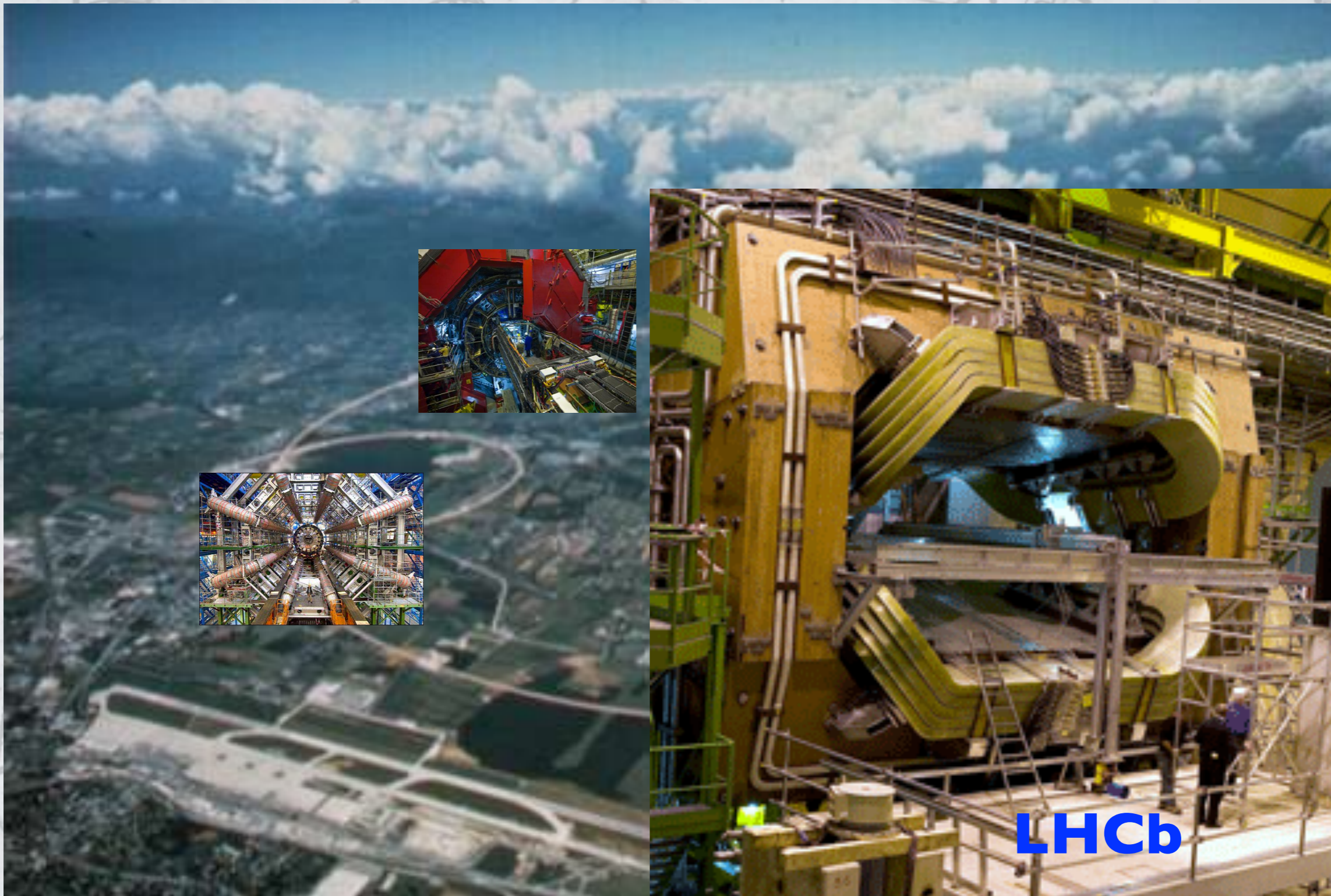


GLI ESPERIMENTI



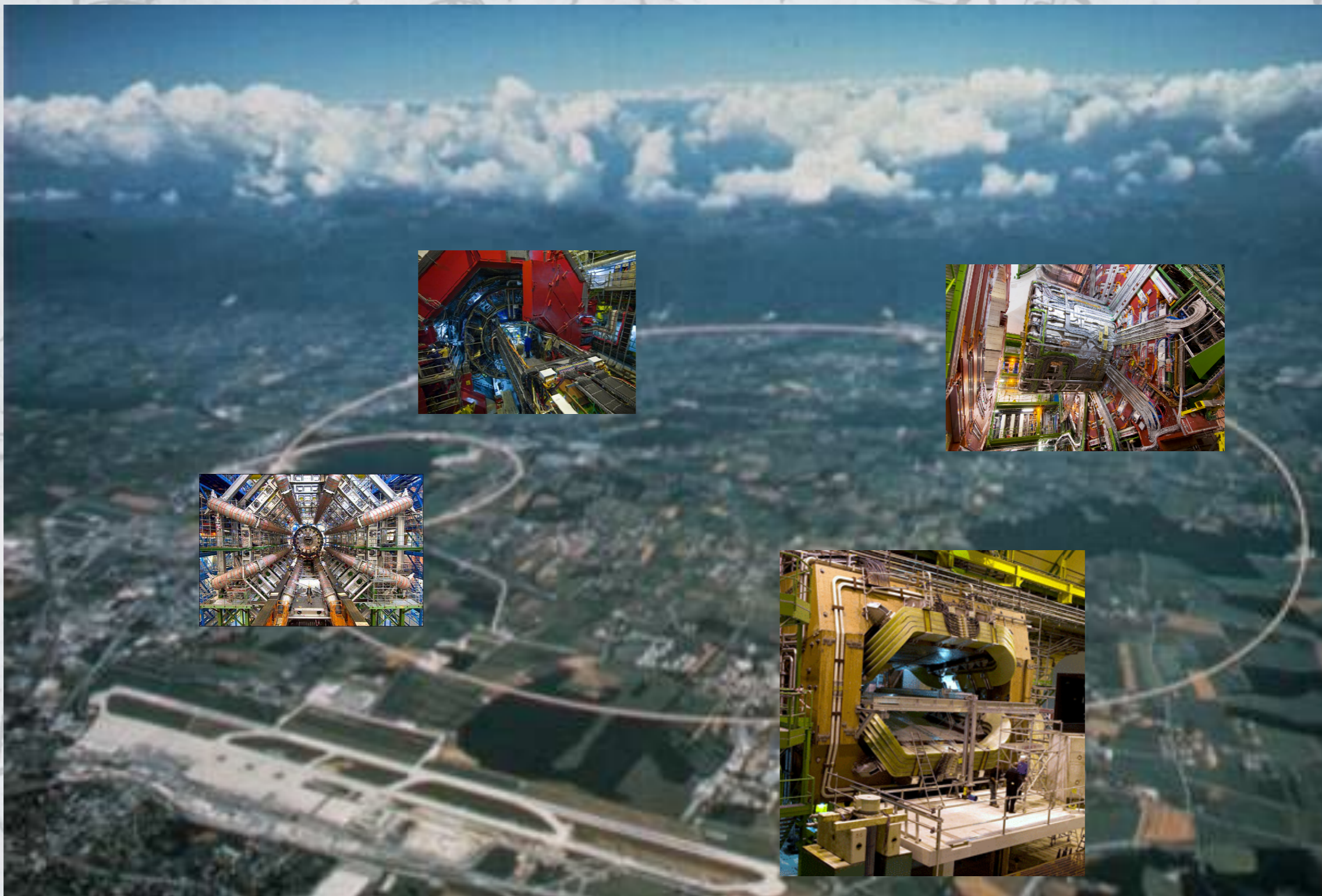


GLI ESPERIMENTI



LHCb

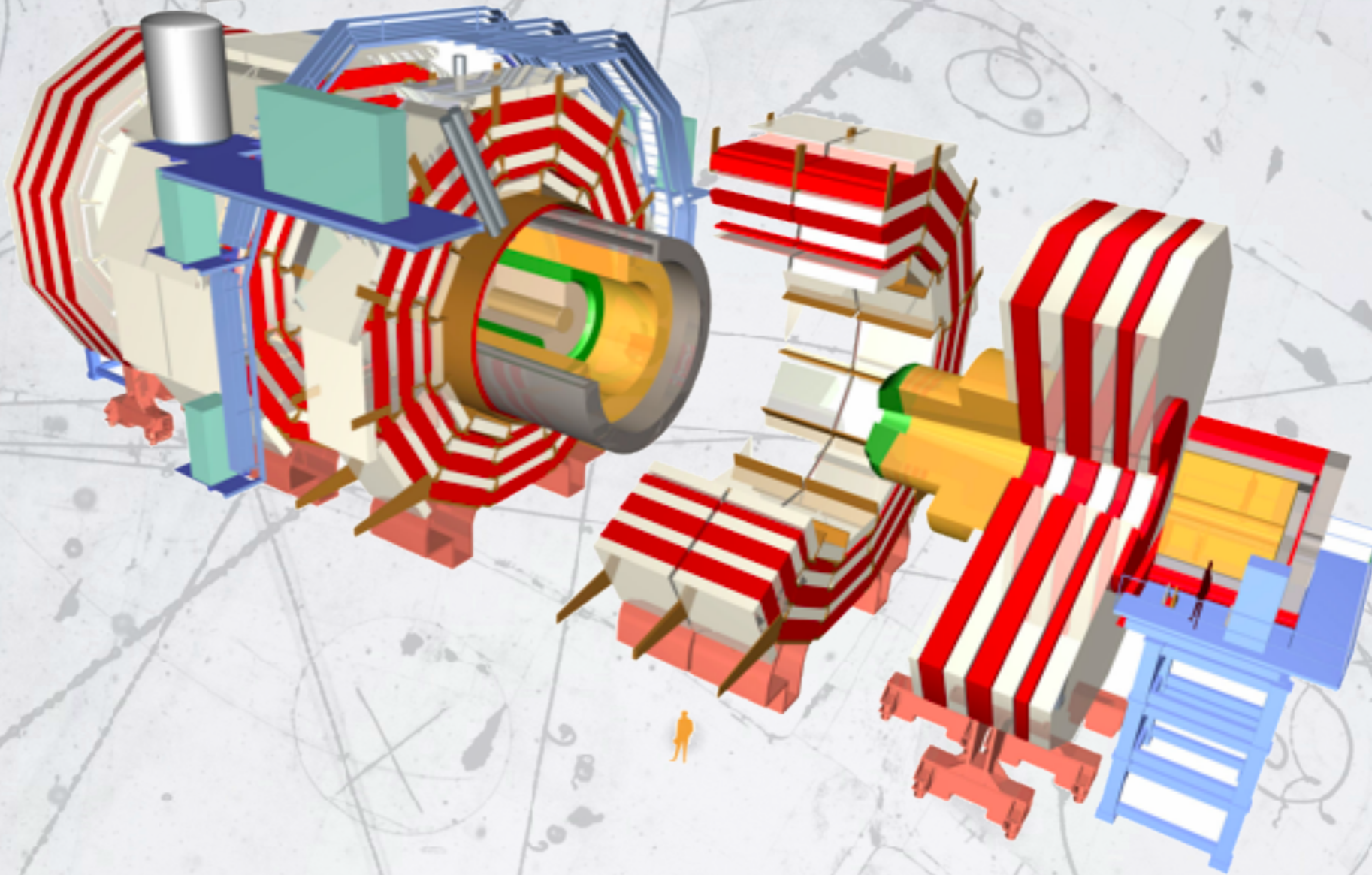
GLI ESPERIMENTI



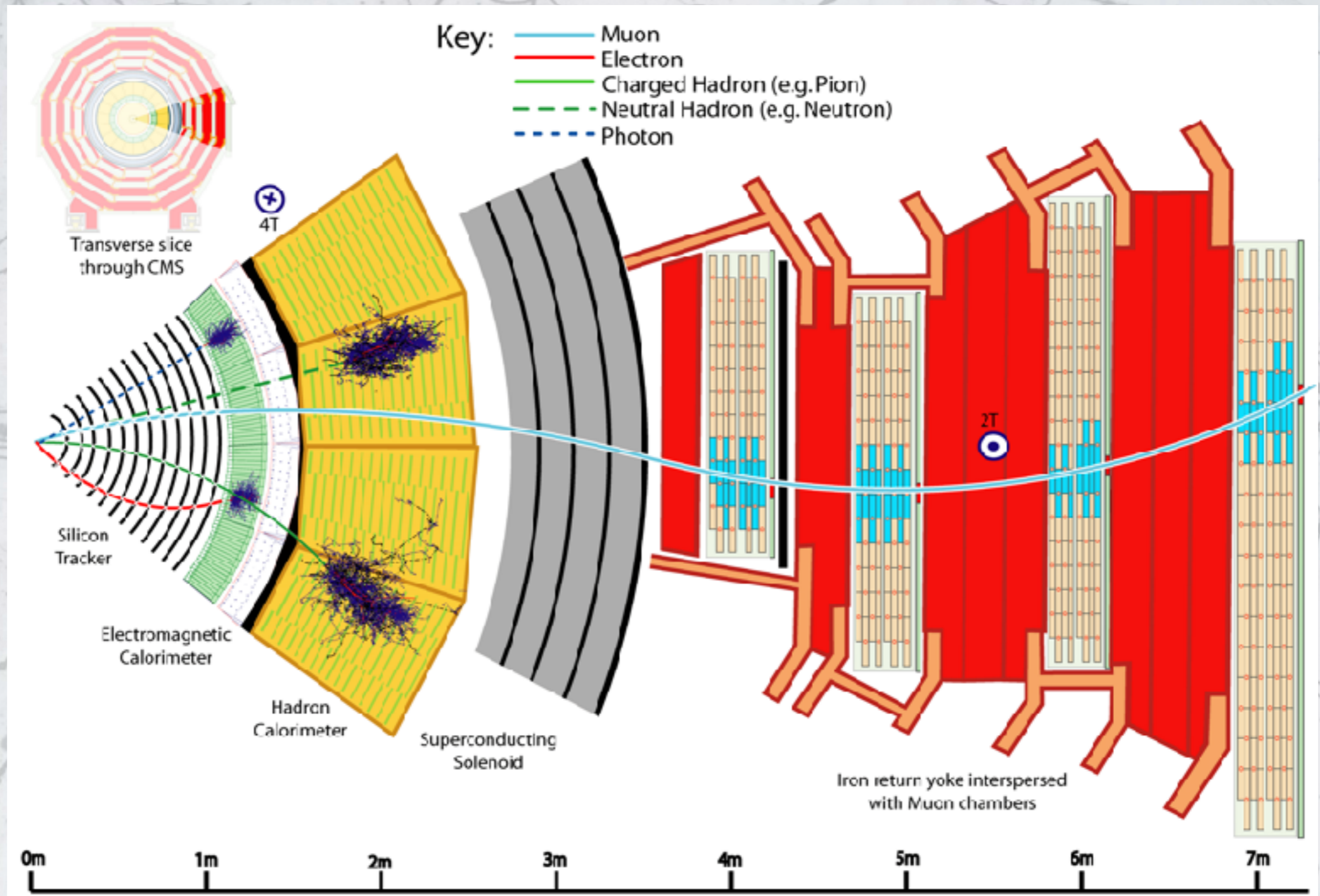
SULLE TRACCE DELLE PARTICELLE



UN RIVELATORE

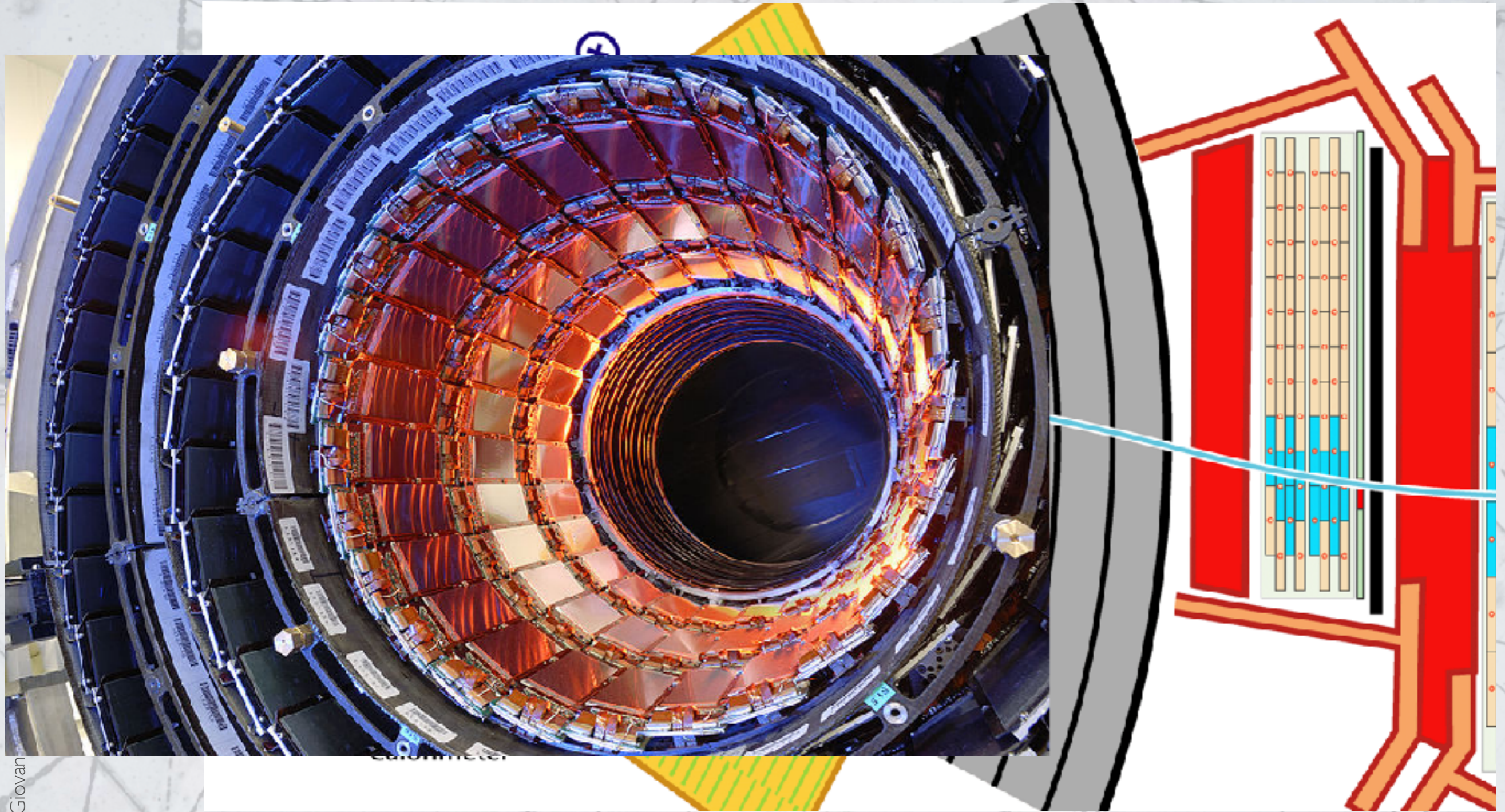


UN RIVELATORE DI PARTICELLE

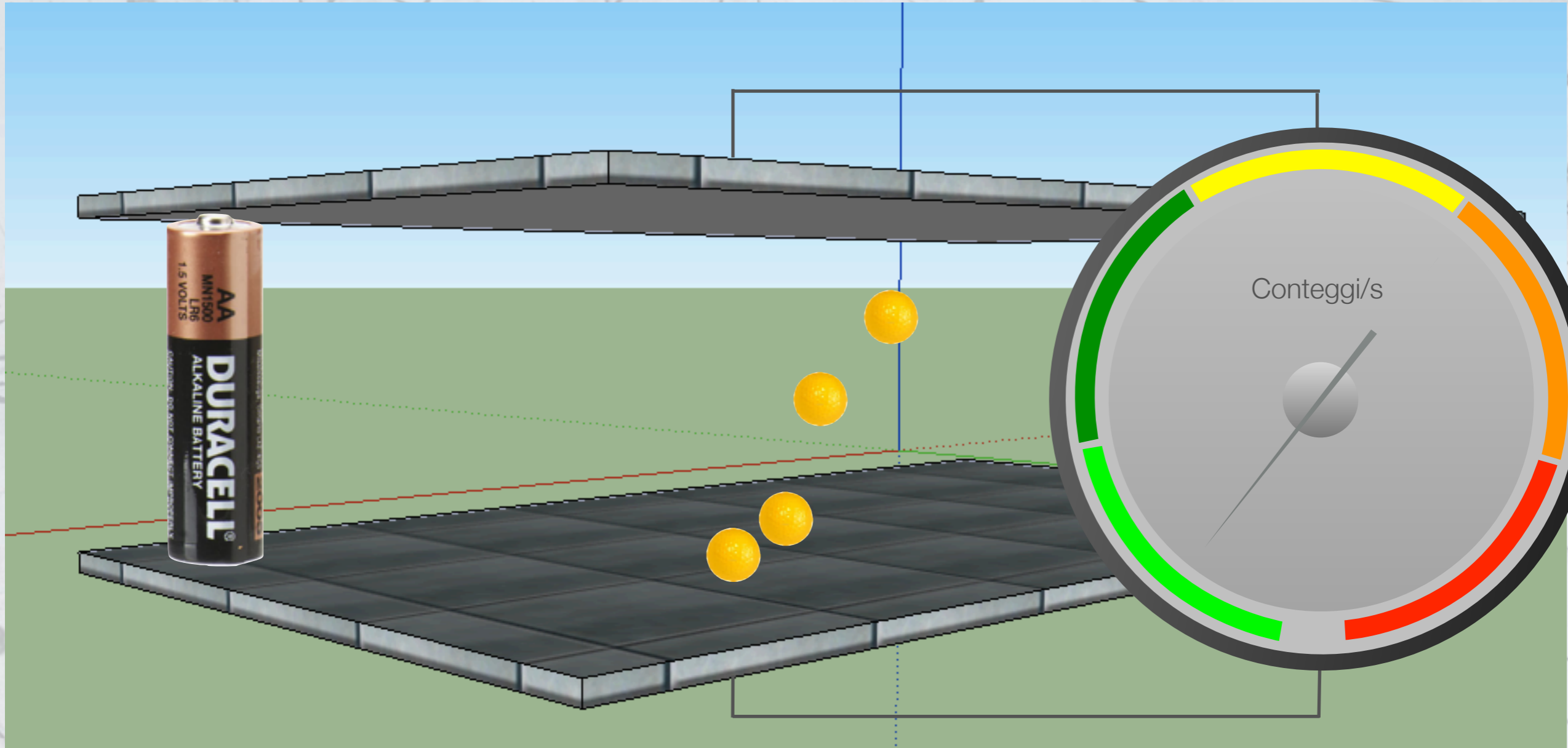


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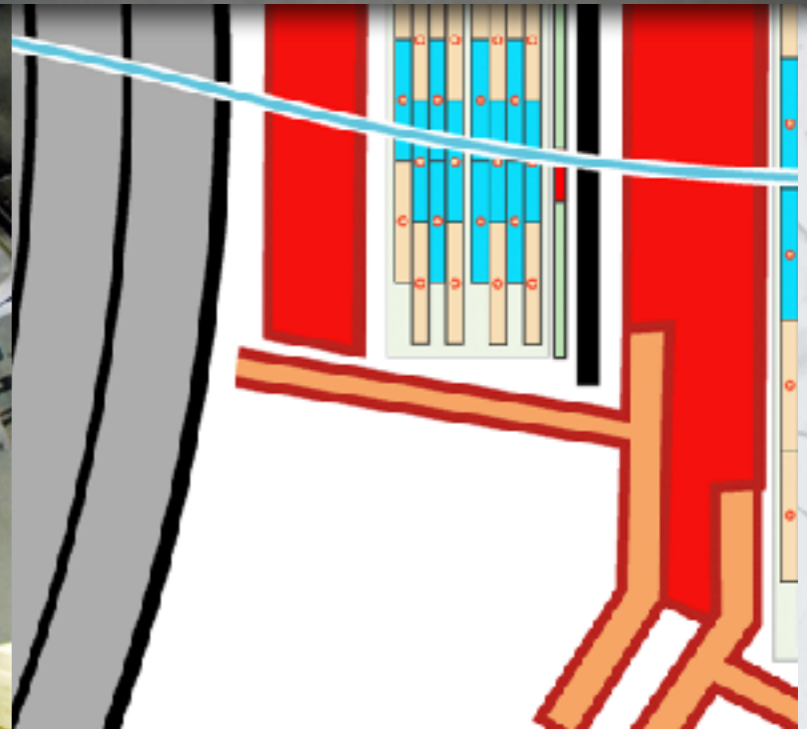
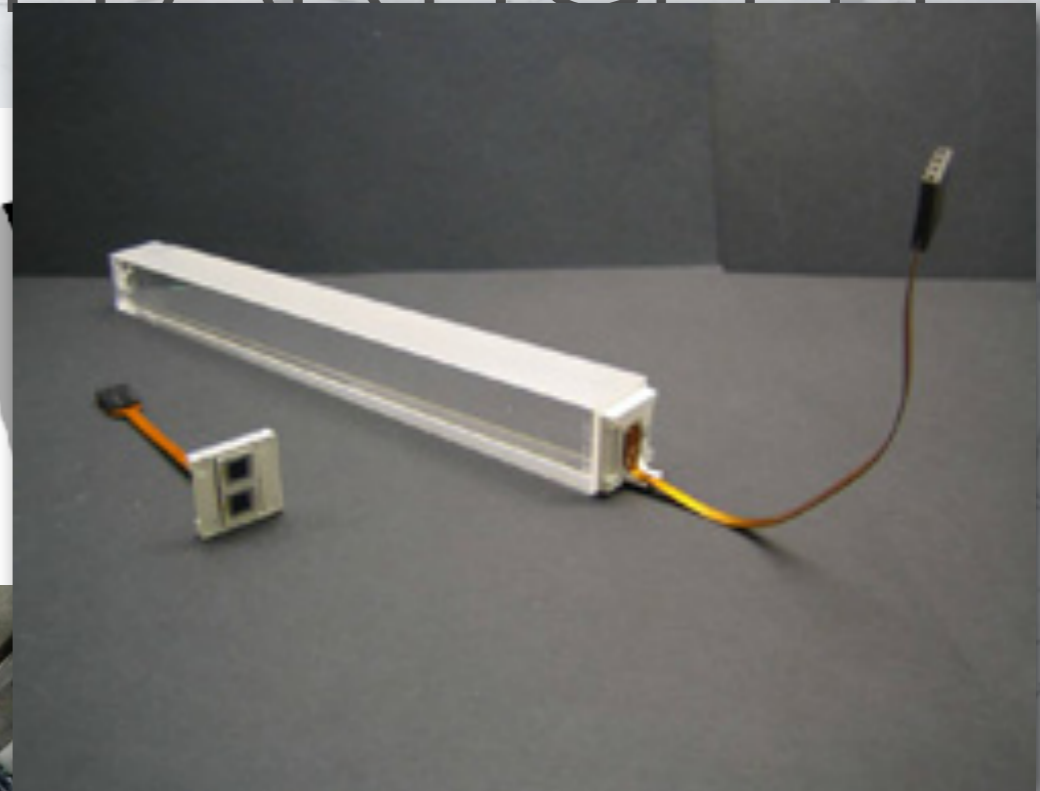
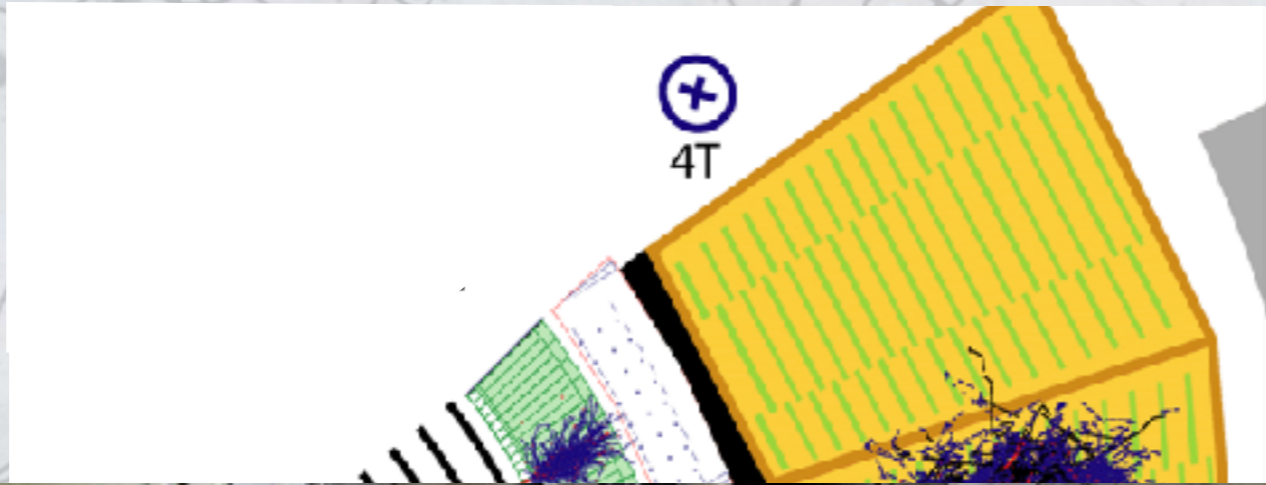
UN RIVELATORE DI PARTICELLE



Giovan

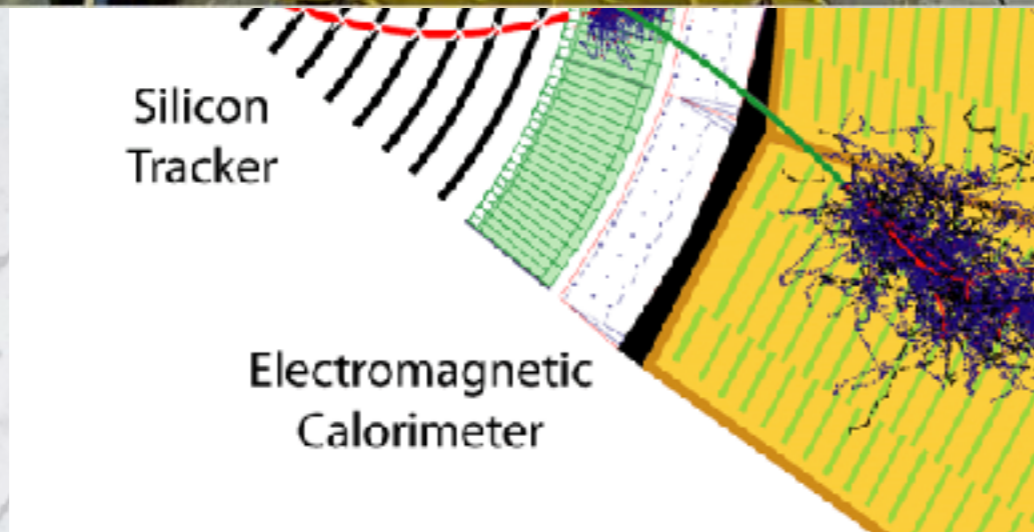
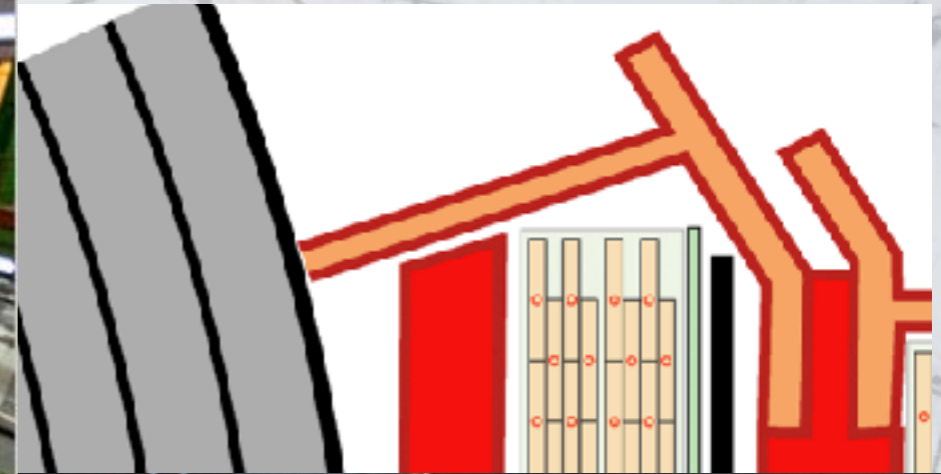
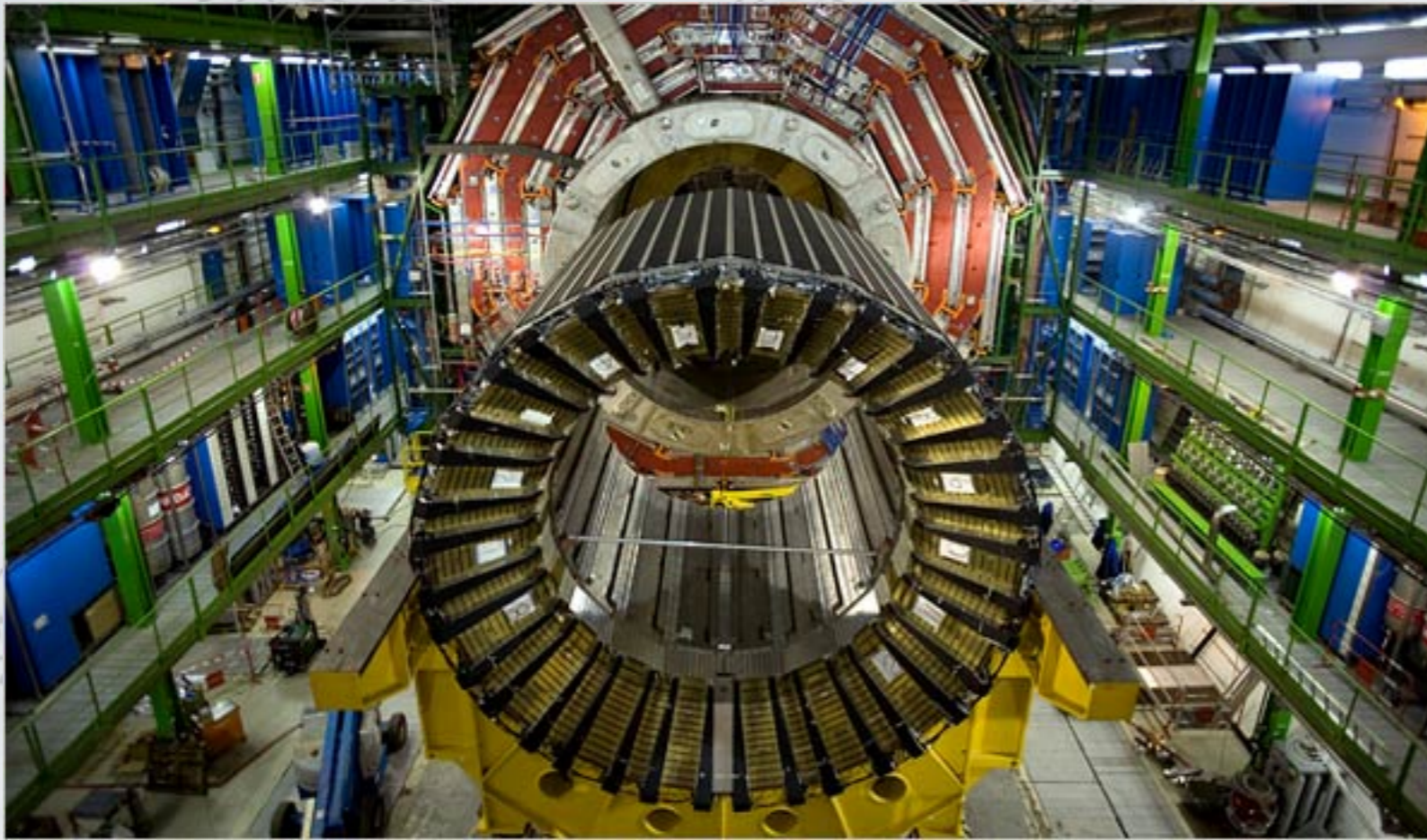


UN RIVELATORE DI PARTICELLE

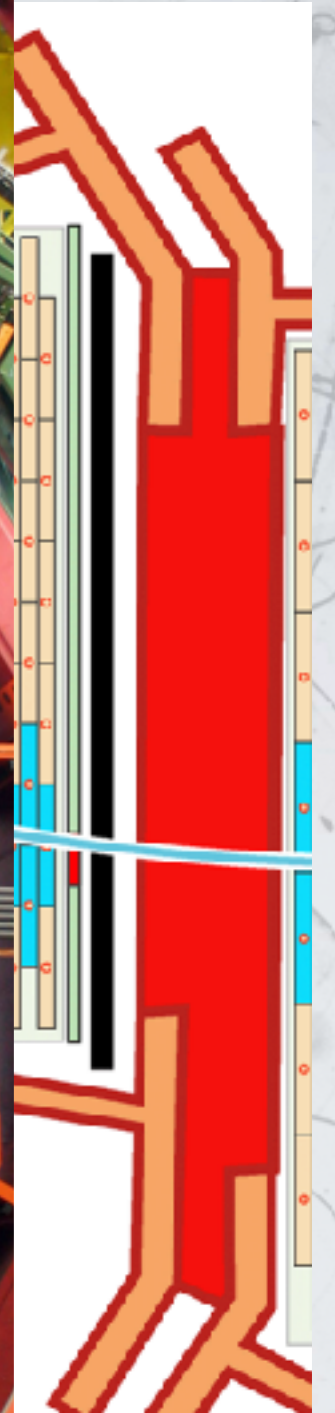
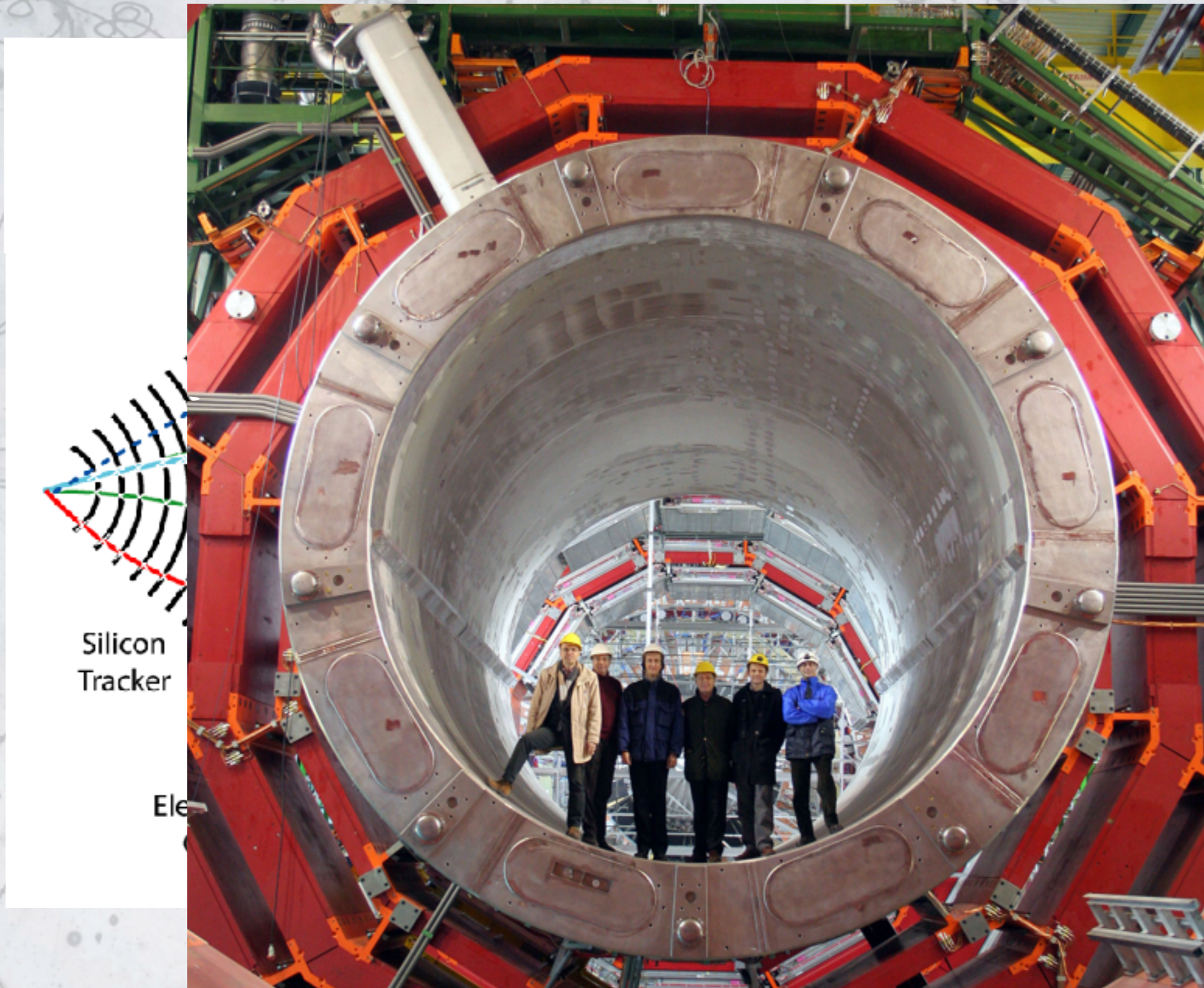


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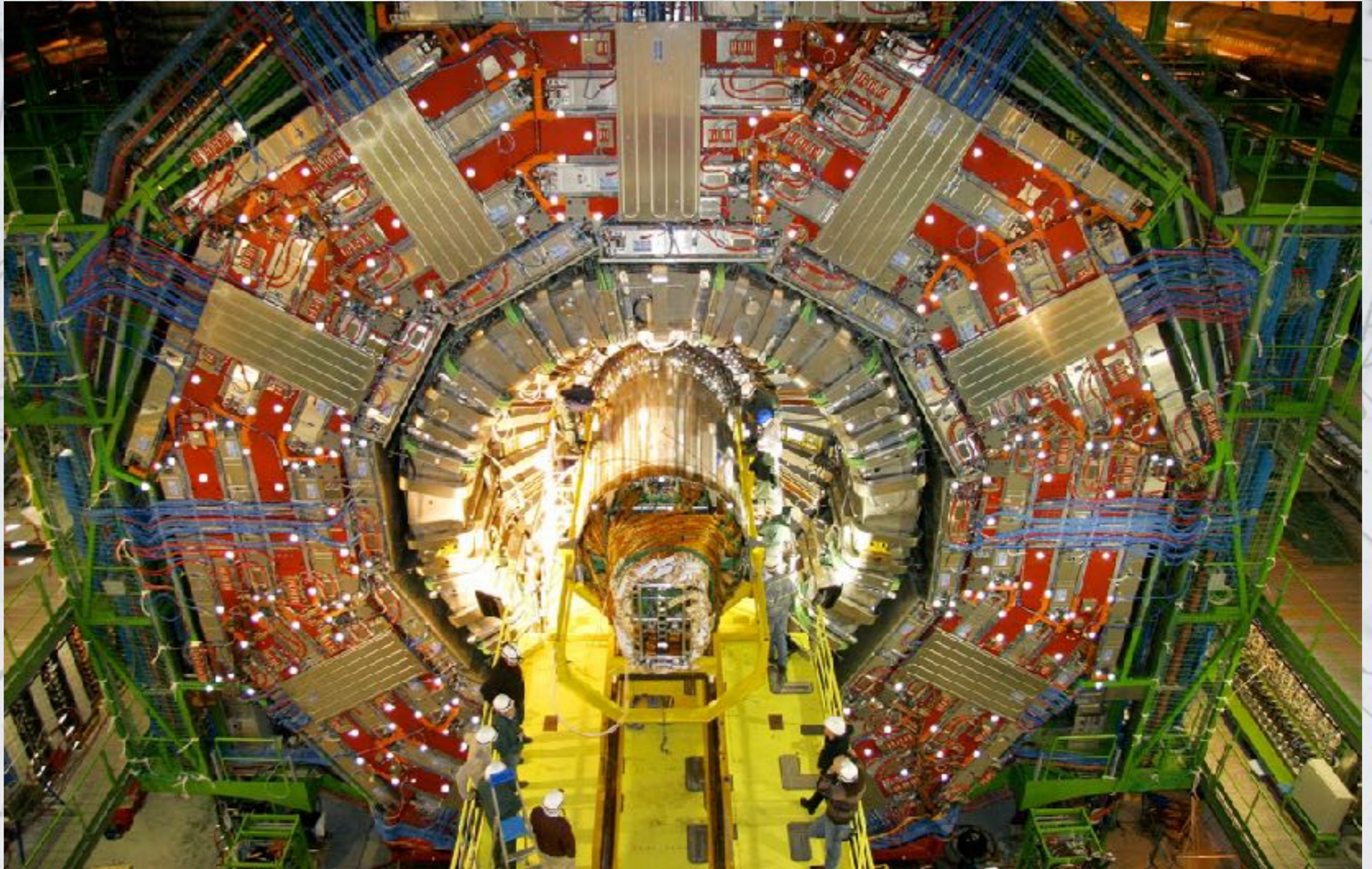
UN RIVELATORE DI PARTICELLE



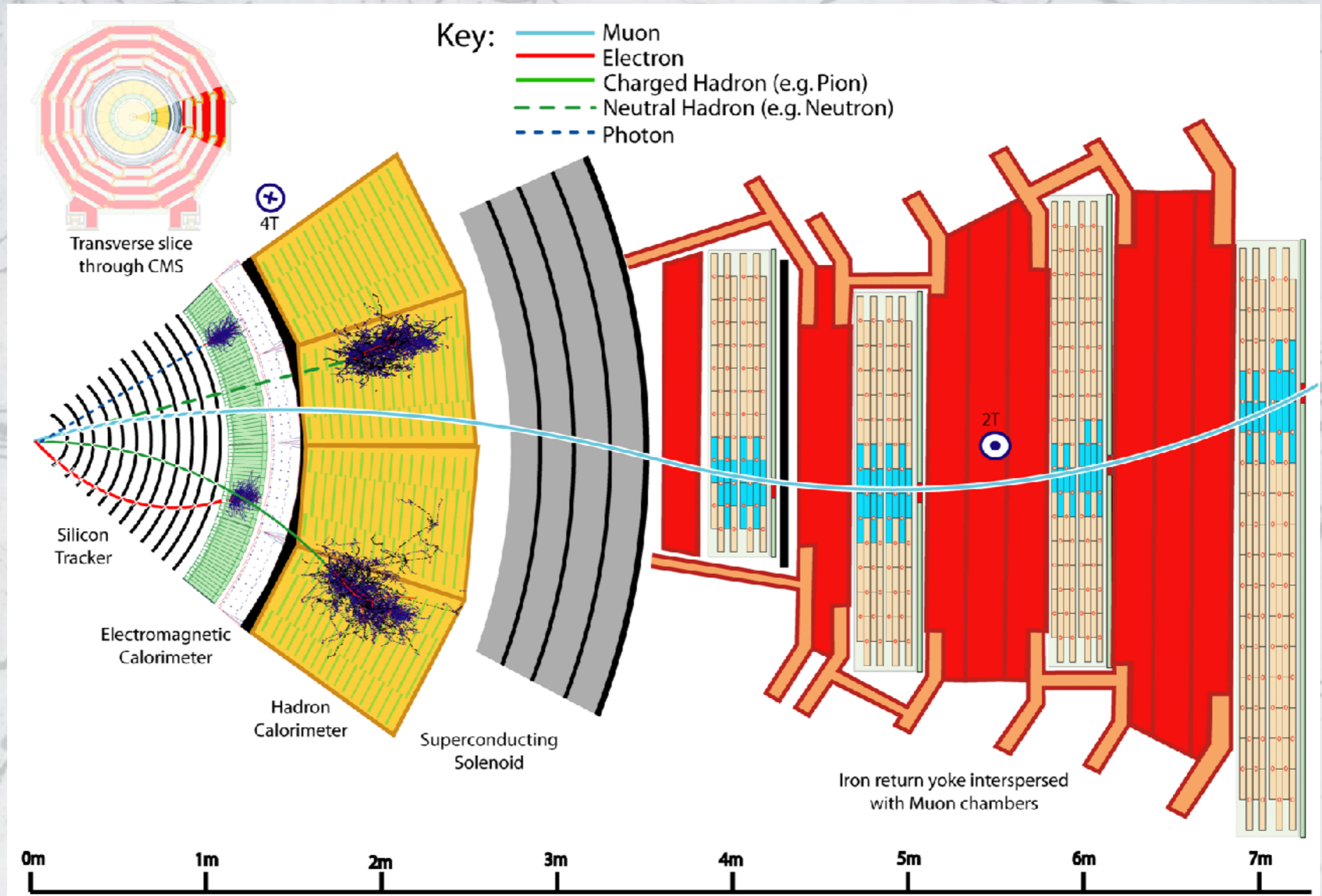
UN RIVELATORE DI PARTICELLE



UN RIVELATORE DI PARTICELLE

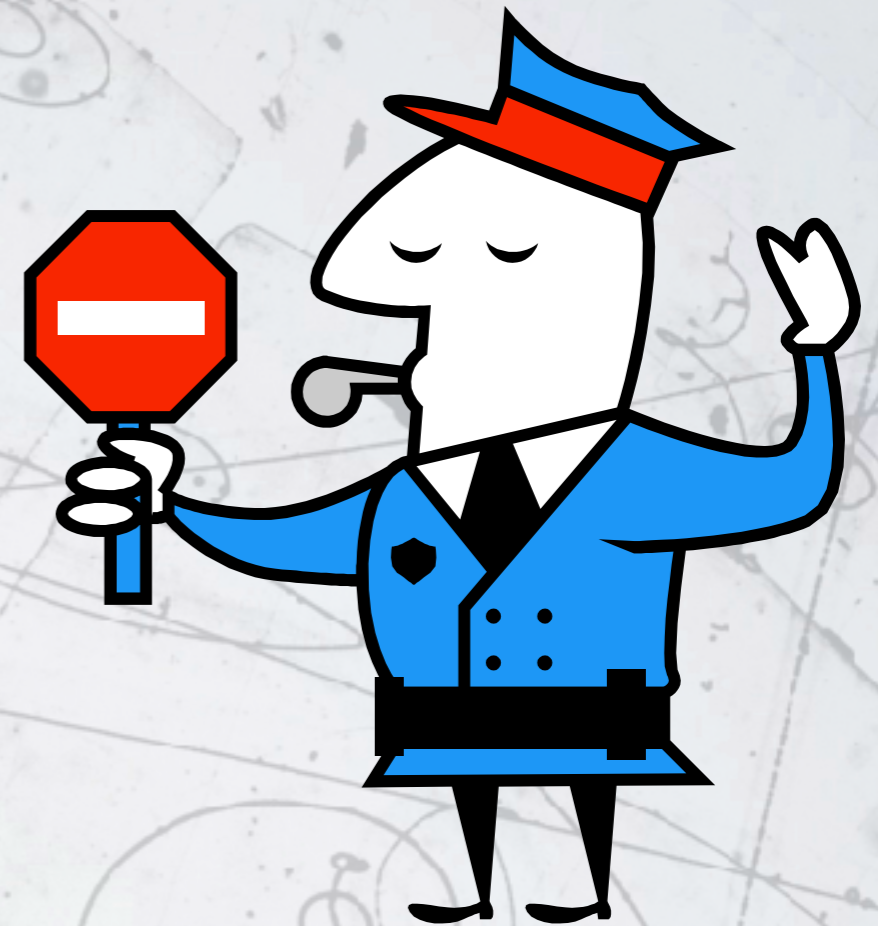


UN RIVELATORE DI PARTICELLE



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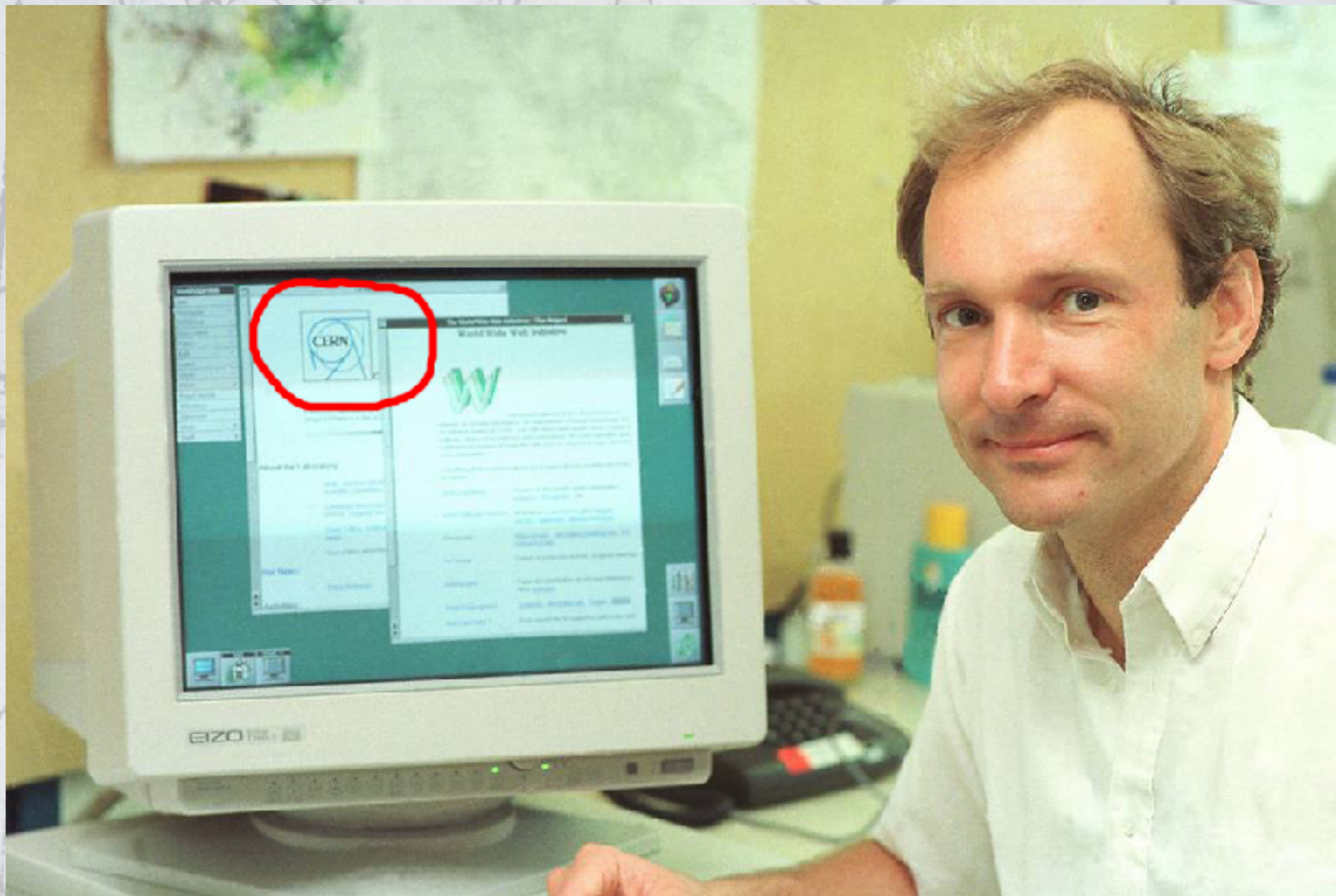
LE DIMENSIONI DEI RIVELATORI



EFFETTI COLLATERALI



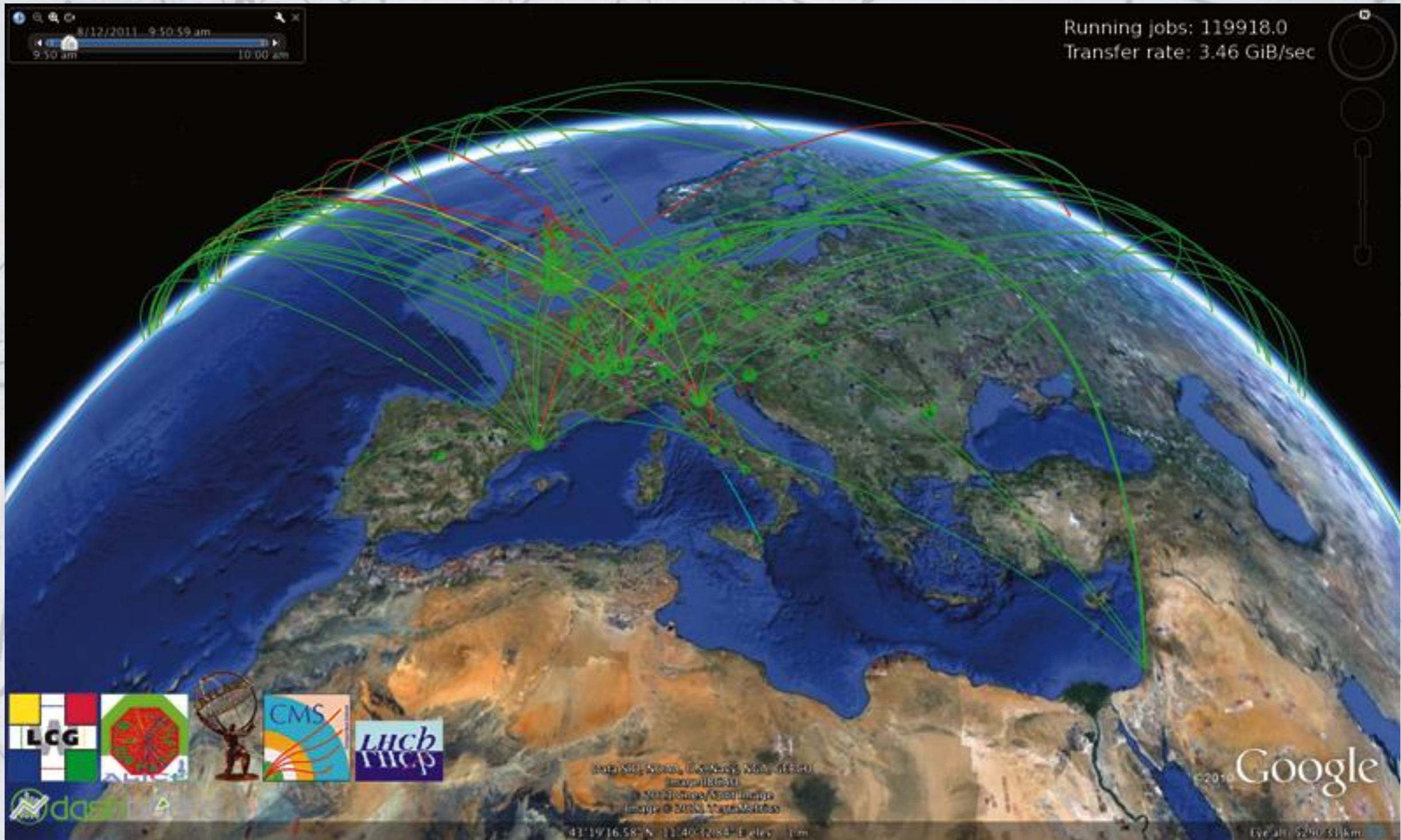
EFFETTI COLLATERALI



EFFETTI COLLATERALI



IL PROSSIMO PASSO?



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E ADESSO TOCCA A TE...

