

# Particle Hits!

a Quark Matter Card Game for 3+ years old

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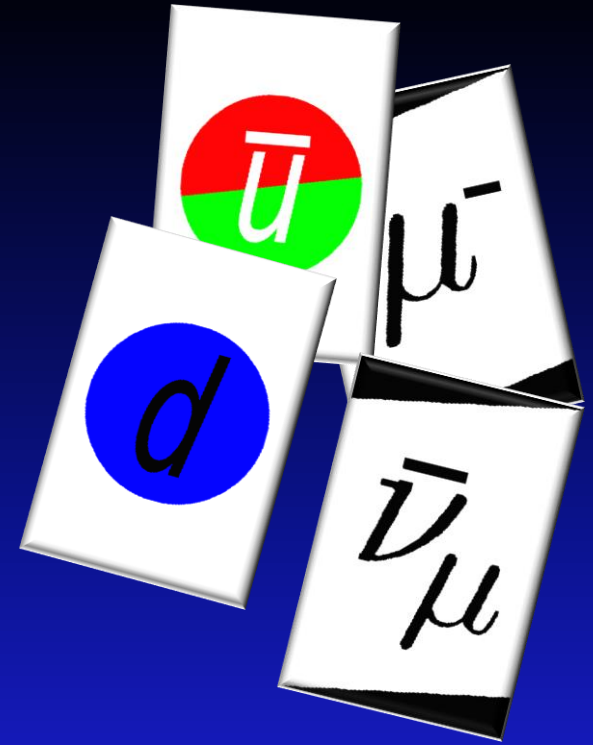
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# Csaba Török (17 years old student's) idea: PARTICLES CARD GAME

**By now:**

**invention, patent and product...**

**66 cards, 4 games:**

- ANTI
- Let us detect!
- Quark Matter (BNL)
- Cosmic Showers

**1<sup>st</sup> edition: an e-book for**

**„Meet the Scientist” opening talk**

**Hungarian, online available**

**<http://www.lulu.com/>**

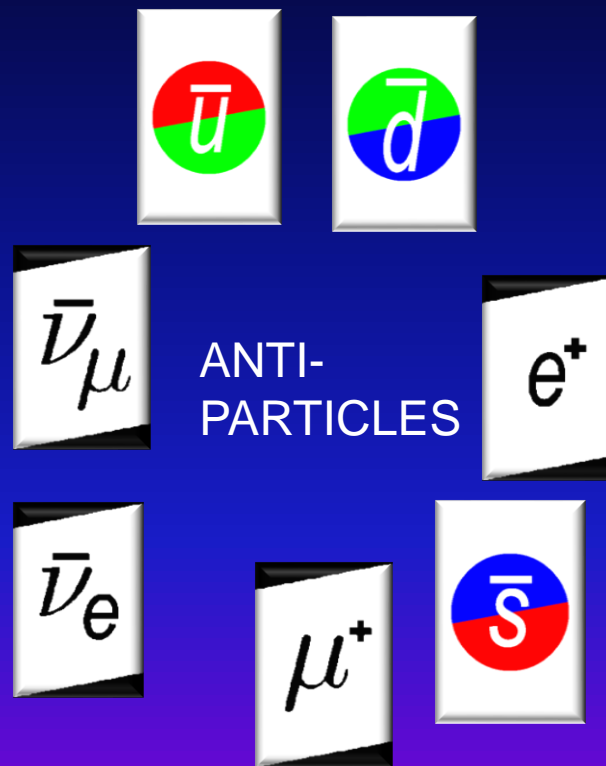


# ELEMENTARY PARTICLES - PLAYFULLY

**Fermions**

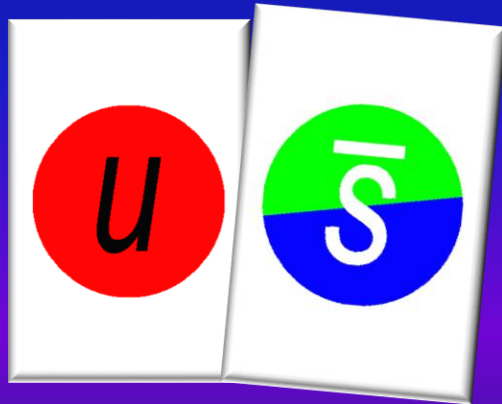
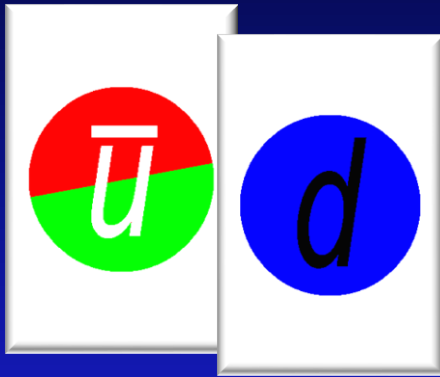
	$2/3$ $1/2$ 	1.27 GeV $2/3$ $1/2$  charm	171.2 GeV $2/3$ $1/2$  top	0 $0$ $1$  photon
Quarks	$4/3$ $-1/3$ $1/2$ 		4.2 GeV $-1/3$ $1/2$  bottom	0 $0$ $1$  gluon
	$0$ $1$ 	$0$ $1$ 	$<15.5$ MeV $0$ $1/2$  tau neutrino	$91.2$ GeV $0$ $1$  weak force
Leptons	$0$ $-1$ $1/2$ 	$1$ $-1$ $1/2$ 	$1.777$ GeV $-1$ $1/2$  tau	$80.4$ GeV $\pm 1$ $1$  weak force

Bosons (Forces)

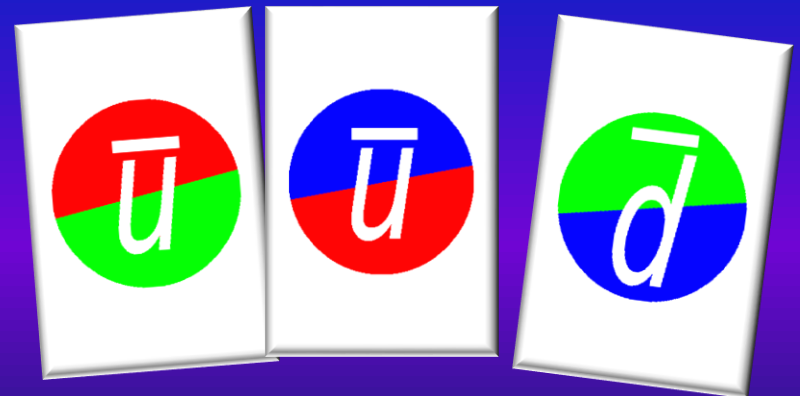
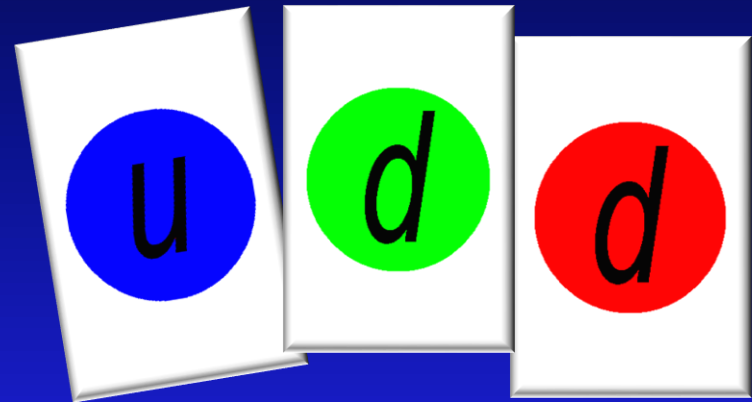


# SU(3) COLOR vs OPTICAL COLOR

Mesons



Baryons



# CARD GAME WITH PARTICLES

**66 cards, 4 games:**

- ANTI
- Let us detect!
- Quark Matter
- Cosmic Showers

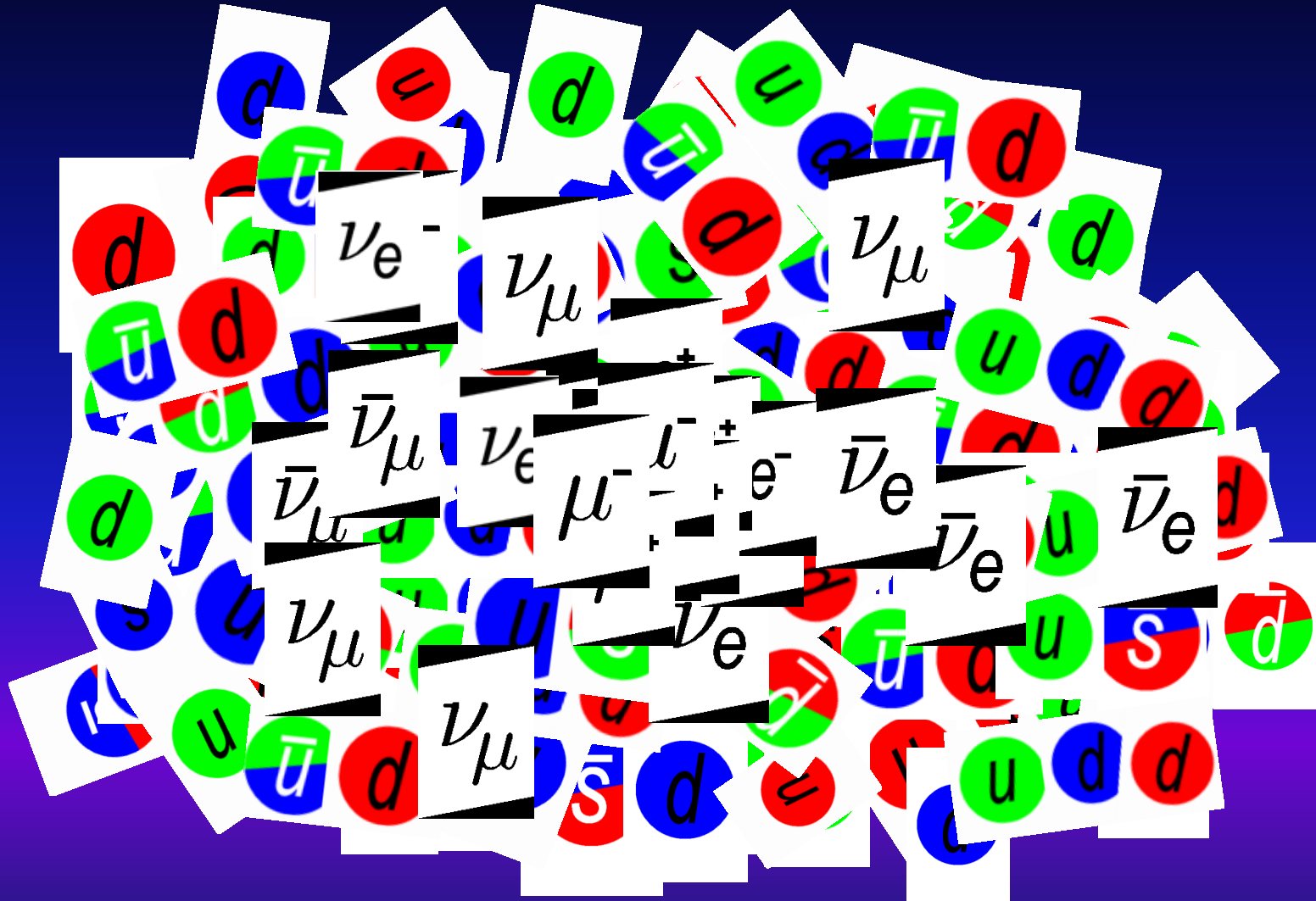
**Published as an e-book**

**„Meet the Scientist“**

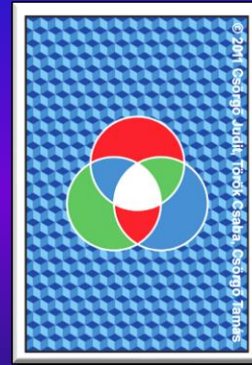
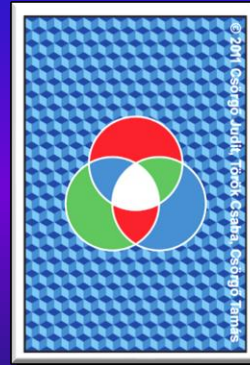
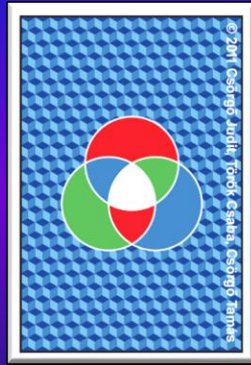
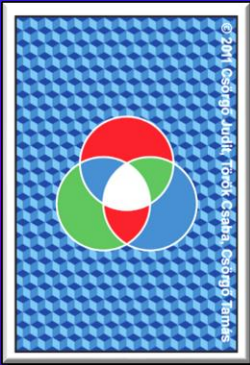
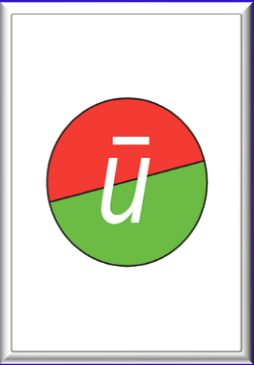
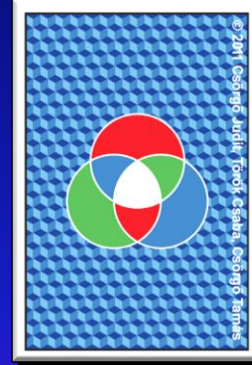
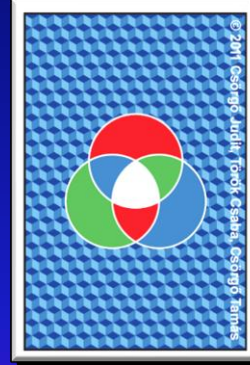
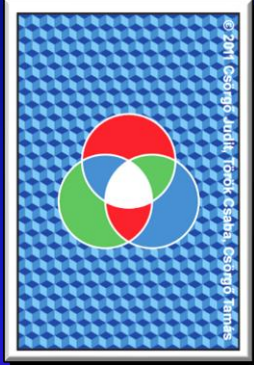
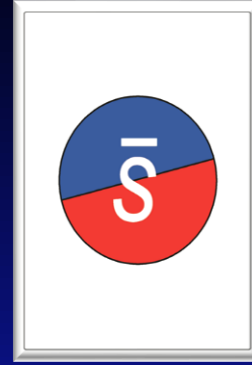
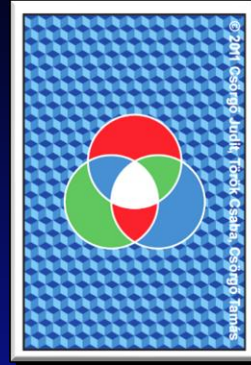
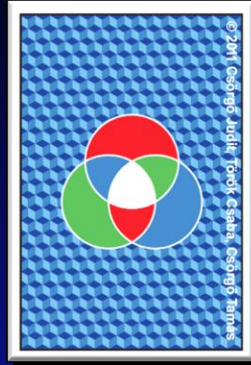
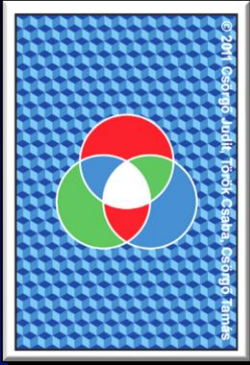
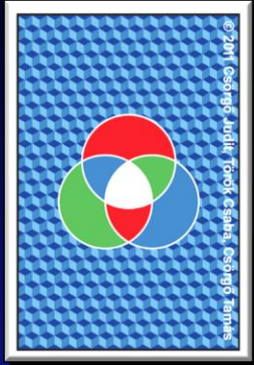
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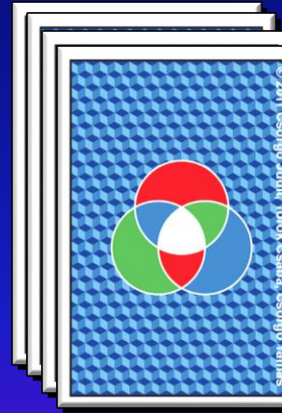
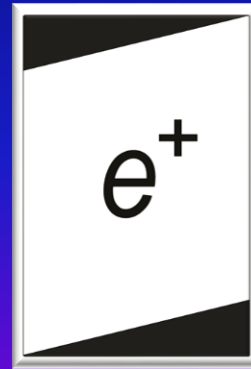
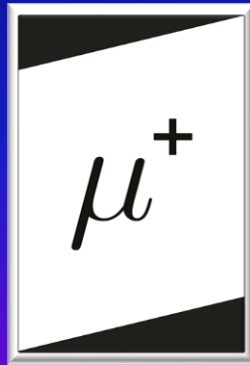
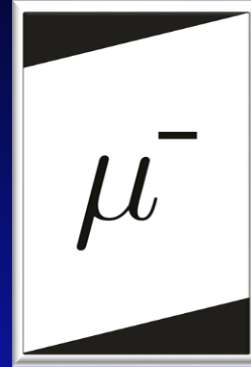
# QUARK MATTER - PLAYFULLY



# Quark Matter Memory – an antibaryon



# Hits!





# SUMMARY

1954: Foundation of CERN (60th Anniversary)

2004: Perfect Fluid of Quarks discovered at RHIC (10th Anniversary)

We wouldn't have thought it's even a great fun for the smallest children, but we realised soon that they love this card game, eventhough they usually don't have much knowledge about quark matter.

Thank you so much for your attention - and support .

