CREDO
status report

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Main activities

smartphone detectors
small cosmic ray detector
Cosmic Ray Ensambles reconstruction
Horizon 2000 preparations

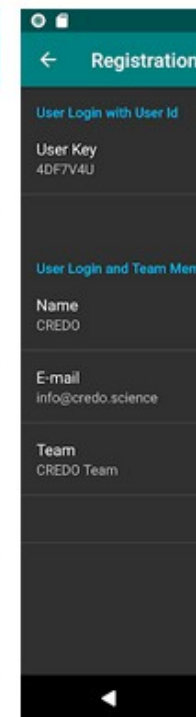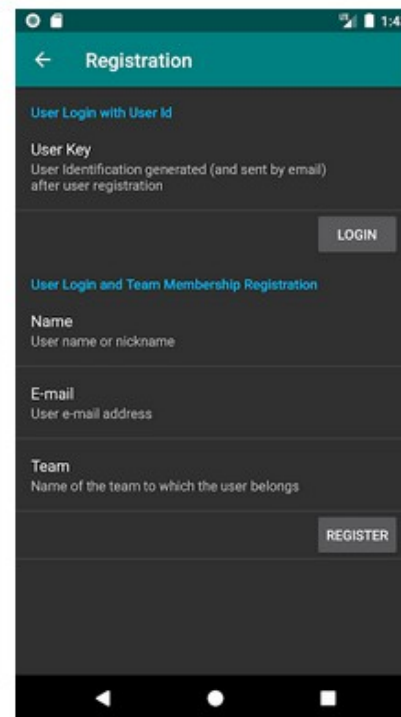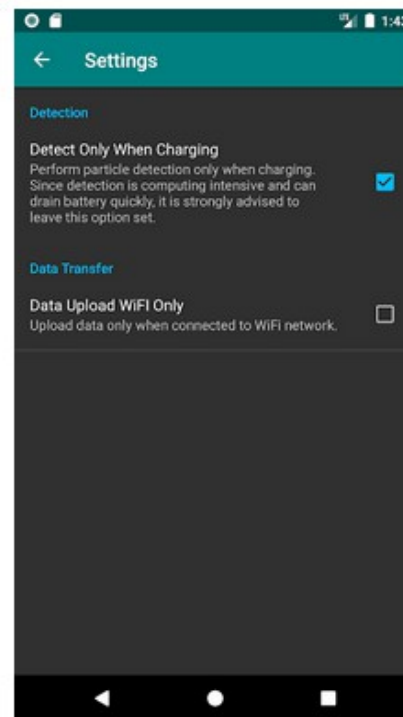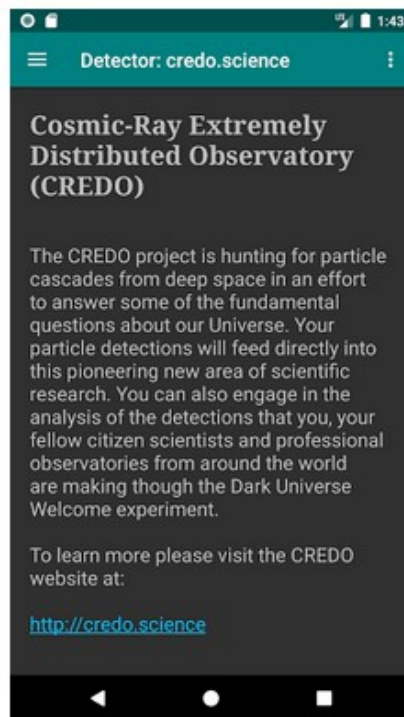Kategorie ⌄ | Strona główna   Najpopularniejsze   Nowości

CREDO Detector

IFJ PAN   **Edukacja**

3 PEGI 3

🔖 Dodaj do listy życzeń   **Zainstaluj**

Detector: credo.science

Cosmic-Ray Extremely Distributed Observatory (CREDO)

The CREDO project is hunting for particle cascades from deep space in an effort to answer some of the fundamental questions about our Universe. Your particle detections will feed directly into this pioneering new area of scientific research. You can also engage in the analysis of the detections that you, your fellow citizen scientists and professional observatories from around the world are making though the Dark Universe Welcome experiment.

To learn more please visit the CREDO website at:

http://credo.science

Settings

Detection

Detect Only When Charging
Perform particle detection only when charging. Since detection is computing intensive and can drain battery quickly, it is strongly advised to leave this option set. ☑

Data Transfer

Data Upload WiFi Only
Upload data only when connected to WiFi network. ☐

Registration

User Login with User Id

User Key
User Identification generated (and sent by email) after user registration

LOGIN

User Login and Team Membership Registration

Name
User name or nickname

E-mail
User e-mail address

Team
Name of the team to which the user belongs

REGISTER

Registration

User Login with User Id

User Key
4DF7V4U

User Login and Team Member

Name
CREDO

E-mail
info@credo.science

Team
CREDO Team

CREDO
THE QUEST FOR UNEXPECTED

🏠 api.credo.science

BETA 1.6 This is beta, so please be forgiving if not all features work properly. Report issues/ideas/wishes on forum!

Detections (608,771)	Users (1,106)	Teams (141)	Maps

📈 top 5 users   ⌄   📈 last 5 registered users   ⌄

⇕ Login	⇕ Detections	⇕ Login	⇕ Detections
kilo	112,521	dekoy10	0
Mafia75 7	56,190	Mateusz	2
Bogdan51	43,177	Dominik	0
mates	33,949	gieerzetka	1
Krzysztof	22,295	Mohamed mostafa	0

📈 Last 20 detections   ⌄

CREDO Detector: examples

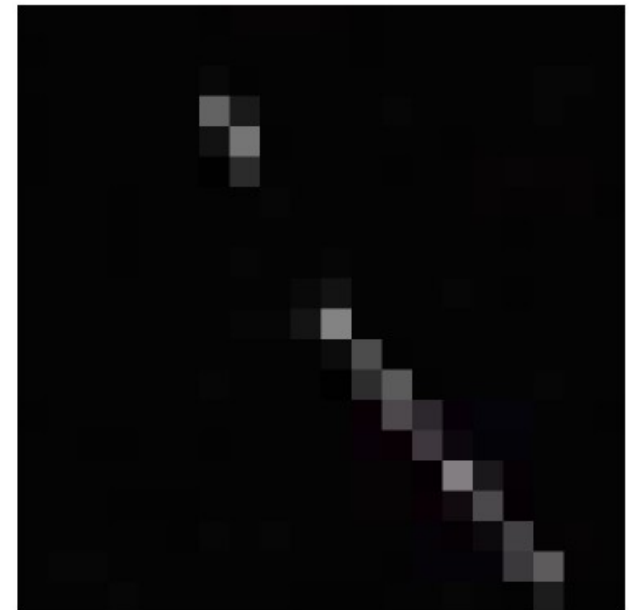User: „Piotr Homola", https://api.credo.science/user/29
Team: „IFJ"
Device: Smasung Galaxy Grand Prime, model SM-G531F
System: Android 5.1.1
Average detection rate: ~1/hr

Example images:

Cosmic Watch
do it yourself detector for ~$100
http://cosmicwatch.lns.mit.edu/

Total Count: 375
Uptime: 0:10:09
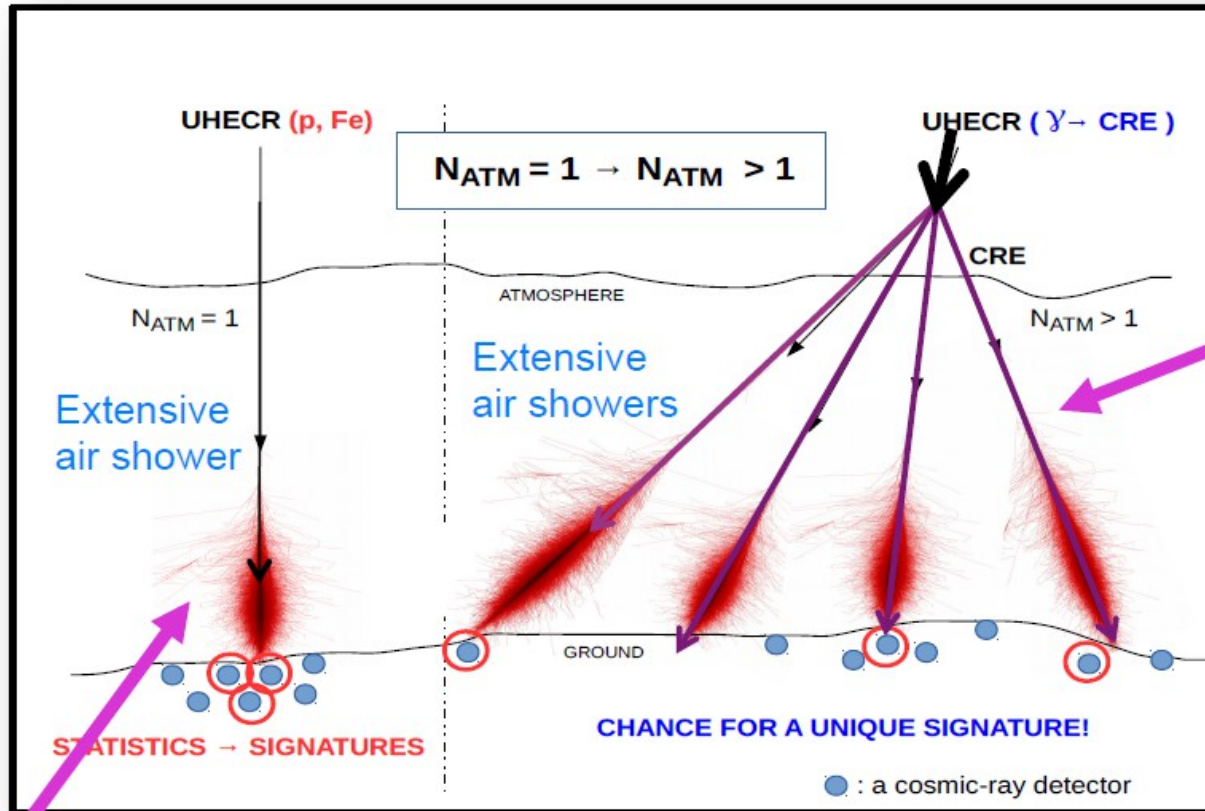Rate: 0.702+/-0.036

Cosmic Watch

CUBES for CREDO
Timing precision of ~10ns
Cost estimate for base+5 cubes ~$500; base+3 bars ~$350
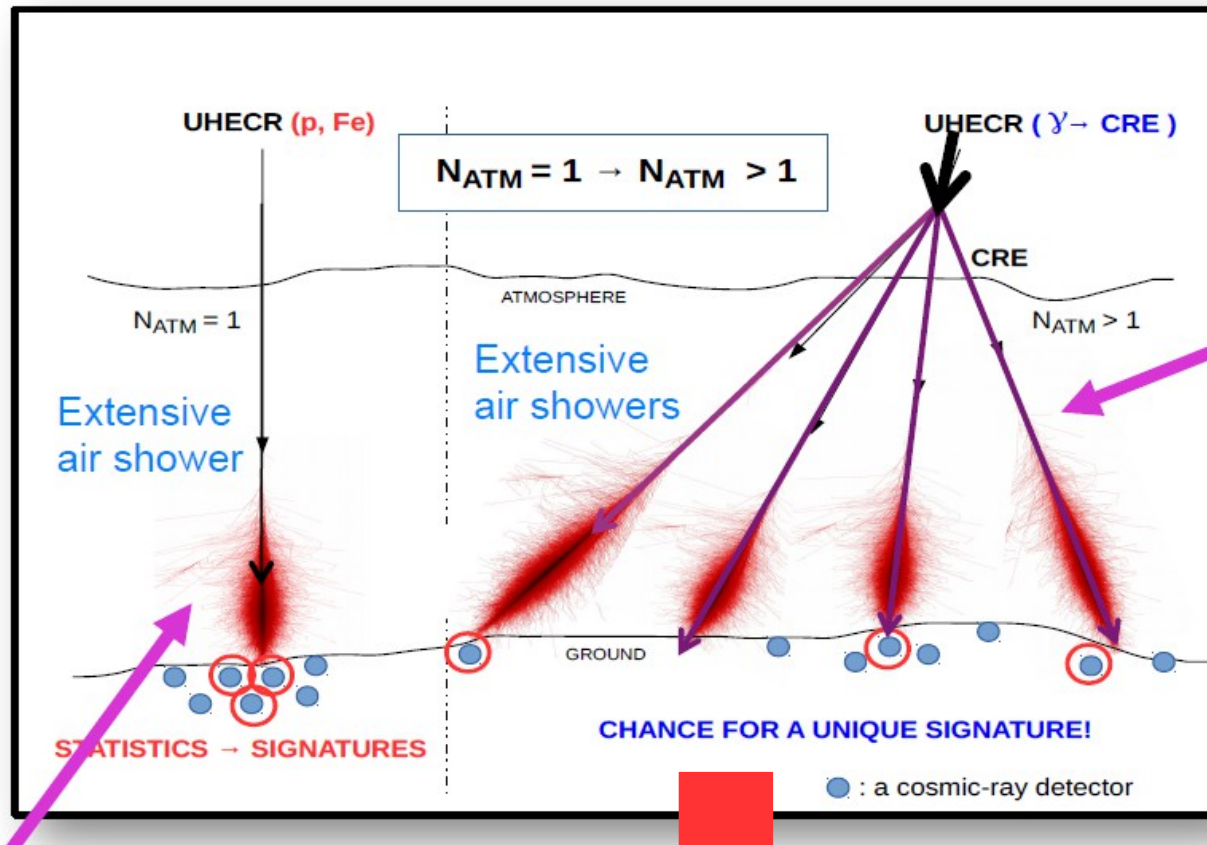
Motivation: looking for Cosmic Ray Ensambles (CRE)

New strategy:
Looking for multiple air showers correlated in time

CREDO

$$N_{ATM} = 1 \rightarrow N_{ATM} > 1$$

UHECR (p, Fe)

UHECR ($\gamma \rightarrow$ CRE)

CRE

ATMOSPHERE

$N_{ATM} = 1$

$N_{ATM} > 1$

Extensive air shower

Extensive air showers

GROUND

STATISTICS → SIGNATURES

CHANCE FOR A UNIQUE SIGNATURE!

⬤ : a cosmic-ray detector

Typical strategy: looking for ONE shower i.e.
Pierre Auger Observatory, Telescope Array, IceCube ....

Motivation: looking for Cosmic Ray Ensambles (CRE)

New strategy:
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CREDO

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$N_{ATM} = 1$

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STATISTICS → SIGNATURES

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⬤ : a cosmic-ray detector

Highly correlated CRE events - time triangulation
More streached in time CRE events - coincidences analysis

Institution interested in CREDO proposal

Institute of Nuclear Physics Polish Academy of Sciences (IFJ PAN)

Cracow Institute of Technology (PK)
Nazarbayev University (NU)
IEAP CTU (CVUT)
RWTH Aachen (RWTH AACHEN)
Comenius University (UK BA)
Wigner RCP (Wigner RCP)
Academic Computing Center CYFRONET AGH (AGH / AGH-UST)
ASCORA GmbH (ASCORA)
Onyax (catherine bodeau-ostermann (onyax))
Taras Shevchenko National University of Kyiv (TSNUK)
National Center "Minor Academy of Sciences of Ukraine" (NC)
Polish-Japanese Academy of Information Technology (PJATK)

CREDO

You are welcome to join us