

Opportunities for EU-China space cooperation

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Areas for international partnerships

- **Explore** the Universe
- **Monitor** the Earth (climate, environment, health, information)
- **Living in Space**
- **Transportation** technology
- **Protecting** Earth from space hazards
- **Space debris**



Space research interests in China (I)

- China will establish an **integrated nationwide ambient air quality monitoring network** in 2015 integrating various monitoring networks into one platform:
 - Atmospheric background
 - Rural air quality
 - Acid deposition
 - Sand and dust storms
 - Greenhouse gases



Space research interests in China (II)

- Space based applications (Navigation, Satcom, Earth observation)
- Space exploration (Moon ...)
- Space science, space station
- Space technologies, transportation and launchers
- Space debris mitigation and removal

Several topics of mutual interest for EU



EU Space research projects with Chinese partners

- Currently 4 projects funded under Space theme in area of **atmosphere & climate monitoring**:
 - AMFIC (completed)
 - DRAGONESS (completed)
 - CARBONES (ongoing)
 - CORE-CLIMAX (recently selected)
- 1 project relating to **cubesats**:
 - QB50 (ongoing)





AMFIC

- Title: **Air Quality Monitoring and Forecasting in China**
- EU contribution: €1.1 million
- Chinese participants:
 - IAP Institute of Atmospheric Physics
 - National Satellite Meteorological Center - NSMC



DRAGONESS



Dragon programme in support of harmonising European and Chinese marine monitoring for environment and security system

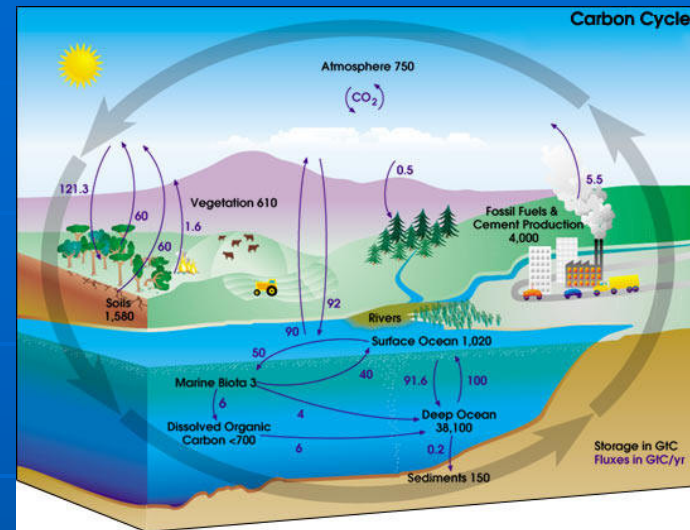
EU contribution: €0.5 million

Chinese partners:

- **The Institute of Atmospheric Physics (IAP)**
- **National Marine Environmental Forecasting Center**
- **National Satellite Ocean Application Service**
- **Nansen-Zhu international research center**
- **Second Institute of Oceanography – State Oceanic Administration**
- **Beijing Normal University**
- **Ministry of Science and Technology**



CARBONES



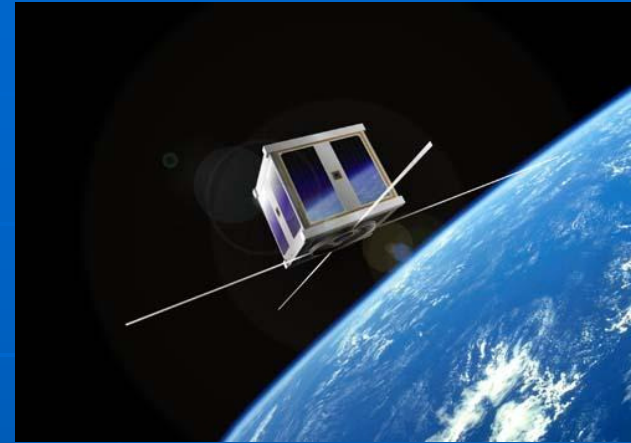
30-year re-analysis of carbon fluxes and pools over Europe and the Globe

EU contribution: €2.6 million

Chinese partner: Beijing University



QB50



International network of 50 CubeSats
for multi-point, in-situ measurements in
the lower thermosphere and re-entry
research

- **EU contribution: €8.0 million**
- **Chinese partner: Northwestern Polytechnic University**



CORE-CLIMAX

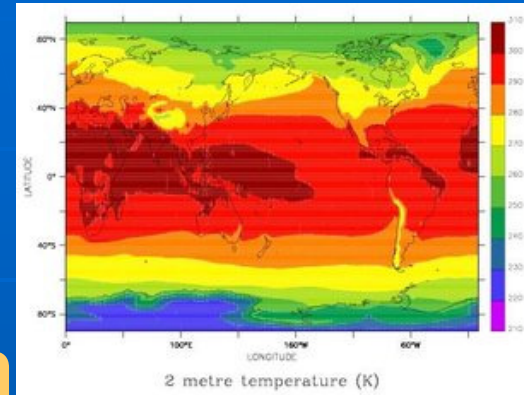
**Coordinating Earth
observation data validation**

for re-analysis for climate services

EU contribution: €2.0 million

Chinese partners:

- Institute of Tibetan Plateau Research**
- Chinese Academy of Sciences**
- Cold and Arid Regions Environmental
and Engineering Research Institute**



Cooperation with China

An **EU-China „Space Dialogue“** is in preparation

Potential topics for cooperation under H2020:

- Remote sensing capabilities for climate change monitoring, marine environment and air quality monitoring (next call)
- Space weather
- Exploration of the Solar System (Moon, Mars)
- Life science
- Experiments on the Chinese Space Station
- Technologies for avoidance and removal of space debris



Conclusions

Opportunities for EU-China cooperation

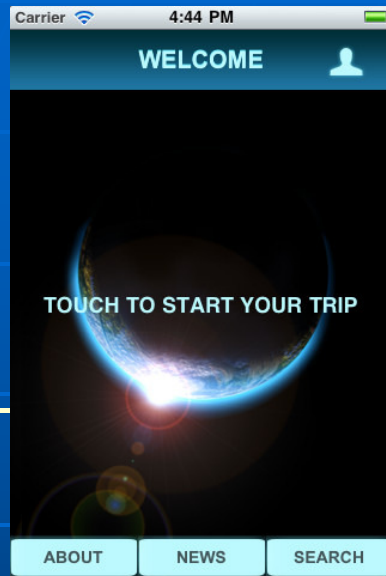
- Both in Earth observation / GMES
- Climate change monitoring
- Specific topic to encourage Chinese participation in air quality monitoring projects in our next call
- Space technologies (EU-China space technology conference – Summit Feb 12)
- Experimental work on the Chinese space station



**More information:
ec.europa.eu/embrace-space**



„EmbraceSpace“ app



iPhone app store

<http://itunes.apple.com/us/app/embracespace/id438683645?mt=8>

Android app market

<http://www.androidblip.com/android-apps/embrace-space-296895.html>



Thank you for your attention

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http://ec.europa.eu/enterprise/policies/space/research/index_en.htm

