

## Pillar 3 : Astroparticle Physics [slides by Ruth Durrer]

- ▶ **Dark Matter**: what are these particles that dominate the matter content of the Universe ?  
**Experiments with CH involvement:** XENON1t, XENONnt, ARGO, DAMIC, DARWIN
- ▶ **Dark Energy** : what is the 'substance' that dominated the energy density of the Universe ?  
**Experiments with CH involvement:** Planck, 4MOST, DES, DESI, LSST, Euclid, SKA . . .
- ▶ **High energy astrophysics** : what can we learn from cosmic accelerators ?  
**Experiments with CH involvement:** MAGIC, VERITAS, FERMI, IceCube, DAMPE, JEM-EUSO, CTA, HERD, PAN
- ▶ **Gravitational waves** : what do they teach us about gravity and about high density environments which we cannot generate on earth ?  
**Experiments with CH involvement:** LIGO/VIRGO, LISA, Einstein Telescope

## Pillar 3 : Present and (near) future FLARE requests

- ▶ **Dark Matter:** XENON1t, XENONnt, (present)  
DARWIN, DAMIC (future)
- ▶ **Dark Energy :** 4MOST (present)
- ▶ **High energy astrophysics :** IceCube (future)
- ▶ **Gravitational waves :** Einstein Telescope (future?)

### **Comments:**

- Many of the named experiments are satellites which do not qualify for FLARE funding.
- CTA, LISA and in the future probably also SKA have separate budget lines from SERI.
- Some of the FLARE funded projects (presently 4MOST) count as astronomy (CHAPS) projects (about 20% of the FLARE budget goes to CHAPS).
- CTA and SKA are long term observatories ( $\sim 30$  years) which are not directly supported by established entities such as ESO and ESA