

# Round Table "Ubi ire?"\*

\* "Where to go?"

**the standard model (SM) tests**  
**only two hints up to now: muon  $g-2$ ,  $m_W$**

- **Cosmology**  
Dark matter  
Dark energy

- **the SM:**

no gravity, no mass origin, more than 20 parameters  
CP-violation, baryon-antibaryon asymmetry  
naturalness, hierarchy & fine-tuning ->

**new physics**

**new physics and SM extension**

**SUSY, strings, branes, extra-dimensions**

**D.I Kazakov, this Workshop**

**M.V. Savina, this Workshop**

# Future Particle Physics

## Beyond SM

**Energy frontier:** HL LHC, FCC  $e^+e^-$ -mode,  
CLIC, China colliders

**Intensity Frontier:** SuperBelle, BEPCIII, SHiP,  
NA62, NA64, VEPP, Super  $c$ - $\tau$ -factory

**Precision Frontier:**  $g-2$ ,  $nEDM$

**Under -ground, -water, -ice:** Icecube, Baikal

**Neutrino:** JUNO, HyperK, ..., DUNE

**Cosmic Rays:** Pierre Auger, ..., satellites

## New Dynamics in SM

EIC (electron ion collider) BNL

NICA

FAIR

JLAB

U-76

China electron-ion collider

## Russia & JINR

### Beyond SM

#### Intensity & Precision Frontier:

VEPP, Super  $c$ - $\tau$ -factory, nEDM

#### Under -ground, -water: GVD-Baikal

Neutrino: BEST, NEUTRINO-4, DANSS, ...

Cosmic Rays: Pamir, Tian-Shan, satellites ...

### New Dynamics in SM

**NICA:** MPD heavy-ion collisions

BM@N short-range nucleon correlations

SPD spin structure, partonic 3D-structure

exotic resonances

electron-ion collider option R&D

**U-76** SPASCHARM charm and exotic resonances