

Annex no. 1 to the Call for proposals - Macroareas and ERC scientific domains

Macroarea PE: Physical Sciences and Engineering	Macroarea LS: Life Sciences	Macroarea SH: Social Sciences and Humanities
<p>PE1 Mathematics: All areas of mathematics, pure and applied, plus mathematical foundations of computer science, mathematical physics and statistics.</p> <p>PE2 Fundamental Constituents of Matter: Particle, nuclear, plasma, atomic, molecular, gas, and optical physics.</p> <p>PE3 Condensed Matter Physics: Structure, electronic properties, fluids, nanosciences, biological physics.</p> <p>PE4 Physical and Analytical Chemical Sciences: Analytical chemistry, chemical theory, physical chemistry/chemical physics.</p> <p>PE5 Synthetic Chemistry and Materials: New materials and new synthetic approaches, structure-properties relations, solid state chemistry, molecular architecture, organic chemistry.</p> <p>PE6 Computer Science and Informatics: Informatics and information systems, computer science, scientific computing, intelligent systems.</p> <p>PE7 Systems and Communication Engineering: Electrical, electronic, communication, optical and systems engineering.</p> <p>PE8 Products and Processes Engineering: Product and process design, chemical, civil, environmental, mechanical, vehicle engineering, energy processes and relevant computational methods.</p> <p>PE9 Universe Sciences: Astro physics/-chemistry/-biology; solar system; planetary systems; stellar, galactic and extragalactic</p>	<p>LS1 Molecules of Life: Biological Mechanisms, Structure and Functions: <i>For all organisms:</i> Molecular biology, biochemistry, structural biology, molecular biophysics, synthetic and chemical biology, drug design, innovative methods and modelling.</p> <p>LS2 Integrative Biology: From Genes and Genomes to Systems: <i>For all organisms:</i> Genetics, epigenetics, genomics and other 'omics studies, bioinformatics, systems biology, genetic diseases, gene editing, innovative methods and modelling, 'omics for personalised medicine.</p> <p>LS3 Cellular, Developmental and Regenerative Biology: <i>For all organisms:</i> Structure and function of the cell, cell-cell communication, embryogenesis, tissue differentiation, organogenesis, growth, development, evolution of development, organoids, stem cells, regeneration, therapeutic approaches.</p> <p>LS4 Physiology in Health, Disease and Ageing: Organ and tissue physiology, comparative physiology, physiology of ageing, pathophysiology, inter-organ and tissue communication, endocrinology, nutrition, metabolism, interaction with the microbiome, non-communicable diseases including cancer (and except disorders of the nervous system and immunity-related diseases).</p> <p>LS5 Neurosciences and Disorders of the Nervous System: Nervous system development, homeostasis</p>	<p>SH1 Individuals, Markets and Organisations: Economics, finance and management</p> <p>SH2 Institutions, Governance and Legal Systems: Political science, international relations, law.</p> <p>SH3 The Social World and its Diversity: Sociology, social psychology, social anthropology, education sciences, communication studies.</p> <p>SH4 The Human Mind and Its Complexity: Cognitive science, psychology, linguistics, theoretical philosophy.</p> <p>SH5 Cultures and Cultural Production: Literary studies, cultural studies, study of the arts, philosophy.</p> <p>SH6 The Study of the Human Past: Archaeology and history.</p> <p>SH7 Human Mobility, Environment, and Space: Human geography, demography, health, sustainability science, territorial planning, spatial analysis.</p>

<p>astronomy; cosmology; space sciences; astronomical instrumentation and data.</p> <p>PE10 Earth System Science: Physical geography, geology, geophysics, atmospheric sciences, oceanography, climatology, cryology, ecology, global environmental change, biogeochemical cycles, natural resources management.</p> <p>PE11 Materials Engineering: Advanced materials development: performance enhancement, modelling, large-scale preparation, modification, tailoring, optimisation, novel and combined use of materials, etc.</p>	<p>and ageing, nervous system function and dysfunction, systems neuroscience and modelling, biological basis of cognitive processes and of behaviour, neurological and mental disorders.</p> <p>LS6 Immunity, Infection and Immunotherapy: The immune system, related disorders and their mechanisms, biology of infectious agents and infection, biological basis of prevention and treatment of infectious diseases, innovative immunological tools and approaches, including therapies.</p> <p>LS7 Prevention, Diagnosis and Treatment of Human Diseases: Medical technologies and tools for prevention, diagnosis and treatment of human diseases, therapeutic approaches and interventions, pharmacology, preventative medicine, epidemiology and public health, digital medicine.</p> <p>LS8 Environmental Biology, Ecology and Evolution: <i>For all organisms:</i> Ecology, biodiversity, environmental change, evolutionary biology, behavioural ecology, microbial ecology, marine biology, ecophysiology, theoretical developments and modelling.</p> <p>LS9 Biotechnology and Biosystems Engineering: Biotechnology using all organisms, biotechnology for environment and food applications, applied plant and animal sciences, bioengineering and synthetic biology, biomass and biofuels, biohazards.</p>	
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