



EuroHPC
Joint Undertaking

EUROHPC JU AND THE ERC PEER REVIEW EVALUATION PANELS

For the planning and operation of the evaluation of EuroHPC JU awards proposals, the ERC panel structure applies.

There are 25 ERC panels to cover all fields of science, assigned to three research domains: Physical Sciences and Engineering (10 Panels, PE1–PE10), Life Sciences (9 Panels, LS1–LS9), and Social Sciences and Humanities (6 Panels, SH1–SH6).

The panel names are accompanied by a list of panel descriptors (i.e. ERC keywords) indicating the fields of research covered by the respective ERC panels. The panel descriptors must always be read in the overall context of the panel's titles and sub-titles.

PHYSICAL SCIENCES AND ENGINEERING

PE1 Mathematics: all areas of mathematics, pure and applied, plus mathematical foundations of computer science, mathematical physics and statistics

PE1_1 Logic and foundations

PE1_2 Algebra

PE1_3 Number theory

PE1_4 Algebraic and complex geometry

PE1_5 Geometry

PE1_6 Topology

PE1_7 Lie groups, Lie algebras

PE1_8 Analysis

PE1_9 Operator algebras and functional analysis

PE1_10 ODE and dynamical systems

PE1_11 Theoretical aspects of partial differential equations

PE1_12 Mathematical physics

PE1_13 Probability

PE1_14 Statistics

PE1_15 Discrete mathematics and combinatorics

PE1_16 Mathematical aspects of computer science

PE1_17 Numerical analysis

PE1_18 Scientific computing and data processing

PE1_19 Control theory and optimization

PE1_20 Application of mathematics in sciences

PE1_21 Application of mathematics in industry and society life

PE2 Fundamental constituents of matter: particle, nuclear, plasma, atomic, molecular, gas, and optical physics

- PE2_1 Fundamental interactions and fields
- PE2_2 Particle physics
- PE2_3 Nuclear physics
- PE2_4 Nuclear astrophysics
- PE2_5 Gas and plasma physics
- PE2_6 Electromagnetism
- PE2_7 Atomic, molecular physics
- PE2_8 Ultra-cold atoms and molecules
- PE2_9 Optics, non-linear optics and nano-optics
- PE2_10 Quantum optics and quantum information
- PE2_11 Lasers, ultra-short lasers and laser physics
- PE2_12 Acoustics
- PE2_13 Relativity
- PE2_14 Thermodynamics
- PE2_15 Non-linear physics
- PE2_16 General physics
- PE2_17 Metrology and measurement
- PE2_18 Statistical physics (gases)

PE3 Condensed matter physics: structure, electronic properties, fluids, nanosciences

- PE3_1 Structure of solids and liquids
- PE3_2 Mechanical and acoustical properties of condensed matter
- PE3_3 Thermal properties of condensed matter
- PE3_4 Transport properties of condensed matter
- PE3_5 Electronic properties of materials and transport
- PE3_6 Lattice dynamics
- PE3_7 Semiconductors, material growth, physical properties
- PE3_8 Superconductivity
- PE3_9 Superfluids
- PE3_10 Spintronics
- PE3_11 Magnetism
- PE3_12 Electro-optics
- PE3_13 Nanophysics: nanoelectronics, nanophotonics, nanomagnetism
- PE3_14 Mesoscopic physics
- PE3_15 Molecular electronics
- PE3_16 Soft condensed matter (liquid crystals...)
- PE3_17 Fluid dynamics (physics)
- PE3_18 Statistical physics (condensed matter)
- PE3_19 Phase transitions, phase equilibria
- PE3_20 Biophysics

PE4 Physical and analytical chemical sciences: analytical chemistry, chemical theory, physical chemistry/chemical physics

PE4_1 Physical chemistry
PE4_2 Spectroscopic and spectrometric techniques
PE4_3 Molecular architecture and Structure
PE4_4 Surface science and nanostructures
PE4_5 Analytical chemistry
PE4_6 Chemical physics
PE4_7 Chemical instrumentation
PE4_8 Electrochemistry, electrodialysis, microfluidics, sensors
PE4_9 Method development in chemistry
PE4_10 Heterogeneous catalysis
PE4_11 Physical chemistry of biological systems
PE4_12 Chemical reactions: mechanisms, dynamics, kinetics and catalytic reactions
PE4_13 Theoretical and computational chemistry
PE4_14 Radiation chemistry
PE4_15 Nuclear chemistry
PE4_16 Photochemistry
PE4_17 Corrosion
PE4_18 Characterization methods of materials

PE5 Synthetic chemistry and materials: materials synthesis, structure-properties relations, functional and advanced materials, molecular architecture, organic chemistry

PE5_1 Structural properties of materials
PE5_2 Solid state materials
PE5_3 Surface modification
PE5_4 Thin films
PE5_5 Ionic liquids
PE5_6 New materials: oxides, alloys, composite, organic-inorganic hybrid, nanoparticles
PE5_7 Biomaterials synthesis
PE5_8 Intelligent materials – self assembled materials
PE5_9 Environment chemistry
PE5_10 Coordination chemistry
PE5_11 Colloid chemistry
PE5_12 Biological chemistry
PE5_13 Chemistry of condensed matter
PE5_14 Homogeneous catalysis
PE5_15 Macromolecular chemistry
PE5_16 Polymer chemistry
PE5_17 Supramolecular chemistry
PE5_18 Organic chemistry
PE5_19 Molecular chemistry
PE5_20 Combinatorial chemistry

PE6 Computer science and informatics: informatics and information systems, computer science, scientific computing, intelligent systems

PE6_1 Computer architecture, pervasive computing, ubiquitous computing

PE6_2 Computer systems, parallel/distributed systems, sensor networks, embedded systems, cyberphysical systems
PE6_3 Software engineering, operating systems, computer languages
PE6_4 Theoretical computer science, formal methods, and quantum computing
PE6_5 Cryptology, security, privacy, quantum crypto
PE6_6 Algorithms, distributed, parallel and network algorithms, algorithmic game theory
PE6_7 Artificial intelligence, intelligent systems, multi agent systems
PE6_8 Computer graphics, computer vision, multimedia, computer games
PE6_9 Human computer interaction and interface, visualization and natural language processing
PE6_10 Web and information systems, database systems, information retrieval and digital libraries
PE6_11 Machine learning, statistical data processing and applications using signal processing (eg. speech, image, and video)
PE6_12 Scientific computing, simulation and modelling tools
PE6_13 Bioinformatics, biocomputing, and DNA and molecular computation

PE7 Systems and communication engineering: electronic, communication, optical and systems engineering

PE7_1 Control engineering
PE7_2 Electrical and electronic engineering: semiconductors, components, systems
PE7_3 Simulation engineering and modelling
PE7_4 Systems engineering, sensorics, actorics, automation
PE7_5 Micro- and nanoelectronics, optoelectronics
PE7_6 Communication technology, high-frequency technology
PE7_7 Signal processing
PE7_8 Networks (communication networks, sensor networks, networks of robots.....) PE7_9
Man-machine-interfaces
PE7_10 Robotics

PE8 Products and processes engineering: product design, process design and control, construction methods, civil engineering, energy systems, material engineering

PE8_1 Aerospace engineering
PE8_2 Chemical engineering, technical chemistry
PE8_3 Civil engineering, maritime/hydraulic engineering, geotechnics, waste treatment
PE8_4 Computational engineering
PE8_5 Fluid mechanics, hydraulic-, turbo-, and piston engines
PE8_6 Energy systems (production, distribution, application)
PE8_7 Micro (system) engineering
PE8_8 Mechanical and manufacturing engineering (shaping, mounting, joining, separation)
PE8_9 Materials engineering (biomaterials, metals, ceramics, polymers, composites, ...)
PE8_10 Production technology, process engineering
PE8_11 Product design, ergonomics, man-machine interfaces
PE8_12 Sustainable design (for recycling, for environment, eco-design)
PE8_13 Lightweight construction, textile technology
PE8_14 Industrial bioengineering
PE8_15 Industrial biofuel production

PE9 Universe sciences: astro-physics/chemistry/biology; solar system; stellar, galactic and extragalactic astronomy, planetary systems, cosmology, space science, instrumentation

- PE9_1 Solar and interplanetary physics
- PE9_2 Planetary systems sciences
- PE9_3 Interstellar medium
- PE9_4 Formation of stars and planets
- PE9_5 Astrobiology
- PE9_6 Stars and stellar systems
- PE9_7 The Galaxy
- PE9_8 Formation and evolution of galaxies
- PE9_9 Clusters of galaxies and large scale structures
- PE9_10 High energy and particles astronomy – X-rays, cosmic rays, gamma rays, neutrinos
- PE9_11 Relativistic astrophysics
- PE9_12 Dark matter, dark energy
- PE9_13 Gravitational astronomy
- PE9_14 Cosmology
- PE9_15 Space Sciences
- PE9_16 Very large data bases: archiving, handling and analysis
- PE9_17 Instrumentation - telescopes, detectors and techniques

PE10 Earth system science: physical geography, geology, geophysics, atmospheric sciences, oceanography, climatology, ecology, global environmental change, biogeochemical cycles, natural resources management

- PE10_1 Atmospheric chemistry, atmospheric composition, air pollution
- PE10_2 Meteorology, atmospheric physics and dynamics
- PE10_3 Climatology and climate change
- PE10_4 Terrestrial ecology, land cover change
- PE10_5 Geology, tectonics, volcanology
- PE10_6 Paleoclimatology, paleoecology
- PE10_7 Physics of earth's interior, seismology, volcanology
- PE10_8 Oceanography (physical, chemical, biological, geological)
- PE10_9 Biogeochemistry, biogeochemical cycles, environmental chemistry
- PE10_10 Mineralogy, petrology, igneous petrology, metamorphic petrology
- PE10_11 Geochemistry, crystal chemistry, isotope geochemistry, thermodynamics
- PE10_12 Sedimentology, soil science, palaeontology, earth evolution
- PE10_13 Physical geography
- PE10_14 Earth observations from space/remote sensing
- PE10_15 Geomagnetism, paleomagnetism
- PE10_16 Ozone, upper atmosphere, ionosphere
- PE10_17 Hydrology, water and soil pollution

LIFE SCIENCES

LS1 Molecular and Structural Biology and Biochemistry: molecular biology, biochemistry, biophysics, structural biology, biochemistry of signal transduction

- LS1_1 Molecular biology and interactions
- LS1_2 General biochemistry and metabolism
- LS1_3 DNA synthesis, modification, repair, recombination and degradation
- LS1_4 RNA synthesis, processing, modification and degradation
- LS1_5 Protein synthesis, modification and turnover
- LS1_6 Biophysics
- LS1_7 Structural biology (crystallography, NMR, EM)
- LS1_8 Biochemistry of signal transduction

LS2 Genetics, Genomics, Bioinformatics and Systems Biology: genetics, population genetics, molecular genetics, genomics, transcriptomics, proteomics, metabolomics, bioinformatics, computational biology, biostatistics, biological modelling and simulation, systems biology, genetic epidemiology

- LS2_1 Genomics, comparative genomics, functional genomics
- LS2_2 Transcriptomics
- LS2_3 Proteomics
- LS2_4 Metabolomics
- LS2_5 Glycomics
- LS2_6 Molecular genetics, reverse genetics and RNAi
- LS2_7 Quantitative genetics
- LS2_8 Epigenetics and gene regulation
- LS2_9 Genetic epidemiology
- LS2_10 Bioinformatics
- LS2_11 Computational biology
- LS2_12 Biostatistics
- LS2_13 Systems biology
- LS2_14 Biological systems analysis, modelling and simulation

LS3 Cellular and Developmental Biology: cell biology, cell physiology, signal transduction, organogenesis, developmental genetics, pattern formation in plants and animals

- LS3_1 Morphology and functional imaging of cells
- LS3_2 Cell biology and molecular transport mechanisms
- LS3_3 Cell cycle and division
- LS3_4 Apoptosis
- LS3_5 Cell differentiation, physiology and dynamics
- LS3_6 Organelle biology
- LS3_7 Cell signalling and cellular interactions
- LS3_8 Signal transduction
- LS3_9 Development, developmental genetics, pattern formation and embryology in animals
- LS3_10 Development, developmental genetics, pattern formation and embryology in plants
- LS3_11 Cell genetics
- LS3_12 Stem cell biology

LS4 Physiology, Pathophysiology and Endocrinology: organ physiology, pathophysiology, endocrinology, metabolism, ageing, regeneration, tumorigenesis, cardiovascular disease, metabolic syndrome

LS4_1 Organ physiology

LS4_2 Comparative physiology

LS4_3 Endocrinology

LS4_4 Ageing

LS4_5 Metabolism, biological basis of metabolism related disorders

LS4_6 Cancer and its biological basis

LS4_7 Cardiovascular diseases

LS4_8 Non-communicable diseases (except for neural/psychiatric, immunity-related, metabolismrelated disorders, cancer and cardiovascular diseases)

LS5 Neurosciences and neural disorders: neurobiology, neuroanatomy, neurophysiology, neurochemistry, neuropharmacology, neuroimaging, systems neuroscience, neurological disorders, psychiatry

LS5_1 Neuroanatomy and neurophysiology

LS5_2 Molecular and cellular neuroscience

LS5_3 Neurochemistry and neuropharmacology

LS5_4 Sensory systems (e.g. visual system, auditory system)

LS5_5 Mechanisms of pain

LS5_6 Developmental neurobiology

LS5_7 Cognition (e.g. learning, memory, emotions, speech)

LS5_8 Behavioral neuroscience (e.g. sleep, consciousness, handedness)

LS5_9 Systems neuroscience

LS5_10 Neuroimaging and computational neuroscience

LS5_11 Neurological disorders (e.g. Alzheimer's disease, Huntington's disease, Parkinson's disease)

LS5_12 Psychiatric disorders (e.g. schizophrenia, autism, Tourette's syndrome, obsessive compulsive disorder, depression, bipolar disorder, attention deficit hyperactivity disorder)

LS6 Immunity and infection: immunobiology, aetiology of immune disorders, microbiology, virology, parasitology, global and other infectious diseases, population dynamics of infectious diseases, veterinary medicine

LS6_1 Innate immunity

LS6_2 Adaptive immunity

LS6_3 Phagocytosis and cellular immunity

LS6_4 Immunosignalling

LS6_5 Immunological memory and tolerance

LS6_6 Immunogenetics

LS6_7 Microbiology

LS6_8 Virology

LS6_9 Bacteriology

LS6_10 Parasitology

LS6_11 Prevention and treatment of infection by pathogens (e.g. vaccination, antibiotics, fungicide)

LS6_12 Biological basis of immunity related disorders

LS6_13 Veterinary medicine

LS7 Diagnostic tools, therapies and public health: aetiology, diagnosis and treatment of disease, public health, epidemiology, pharmacology, clinical medicine, regenerative medicine, medical ethics

- LS7_1 Medical engineering and technology
- LS7_2 Diagnostic tools (e.g. genetic, imaging)
- LS7_3 Pharmacology, pharmacogenomics, drug discovery and design, drug therapy
- LS7_4 Analgesia
- LS7_5 Toxicology
- LS7_6 Gene therapy, stem cell therapy, regenerative medicine
- LS7_7 Surgery
- LS7_8 Radiation therapy
- LS7_9 Health services, health care research
- LS7_10 Public health and epidemiology
- LS7_11 Environment and health risks including radiation
- LS7_12 Occupational medicine
- LS7_13 Medical ethics

LS8 Evolutionary, population and environmental biology: evolution, ecology, animal behaviour, population biology, biodiversity, biogeography, marine biology, ecotoxicology, prokaryotic biology

- LS8_1 Ecology (theoretical, community, population, microbial, evolutionary ecology)
- LS8_2 Population biology, population dynamics, population genetics, plant-animal interactions
- LS8_3 Systems evolution, biological adaptation, phylogenetics, systematics
- LS8_4 Biodiversity, comparative biology
- LS8_5 Conservation biology, ecology, genetics
- LS8_6 Biogeography
- LS8_7 Animal behaviour (behavioural ecology, animal communication)
- LS8_8 Environmental and marine biology
- LS8_9 Environmental toxicology
- LS8_10 Prokaryotic biology
- LS8_11 Symbiosis

LS9 Applied life sciences and biotechnology: agricultural, animal, fishery, forestry and food sciences; biotechnology, chemical biology, genetic engineering, synthetic biology, industrial biosciences; environmental biotechnology and remediation

- LS9_1 Genetic engineering, transgenic organisms, recombinant proteins, biosensors
- LS9_2 Synthetic biology and new bio-engineering concepts
- LS9_3 Agriculture related to animal husbandry, dairying, livestock raising
- LS9_4 Aquaculture, fisheries
- LS9_5 Agriculture related to crop production, soil biology and cultivation, applied plant biology
- LS9_6 Food sciences
- LS9_7 Forestry, biomass production (e.g. for biofuels)
- LS9_8 Environmental biotechnology, bioremediation, biodegradation
- LS9_9 Biotechnology (non-medical), bioreactors, applied microbiology
- LS9_10 Biomimetics
- LS9_11 Biohazards, biological containment, biosafety, biosecurity

SOCIAL SCIENCES AND HUMANITIES

SH1 Individuals, institutions and markets: economics, finance and management

- SH1_1 Macroeconomics, business cycles
- SH1_2 Development, economic growth
- SH1_3 Microeconomics, institutional economics
- SH1_4 Econometrics, statistical methods
- SH1_5 Financial markets, asset prices, international finance
- SH1_6 Banking, corporate finance, accounting
- SH1_7 Competitiveness, innovation, research and development
- SH1_8 Consumer choice, behavioural economics, marketing
- SH1_9 Organization studies, strategy
- SH1_10 Human resource management, labour economics
- SH1_11 Public economics, political economics, public administration
- SH1_12 Income distribution, poverty
- SH1_13 International trade, economic geography
- SH1_14 History of economics and economic thought, quantitative and institutional economic history

SH2 Institutions, values, beliefs and behaviour: sociology, social anthropology, political science, law, communication, social studies of science and technology

- SH2_1 Social structure, inequalities, social mobility, interethnic relations
- SH2_2 Ageing, work, social policies, welfare
- SH2_3 Kinship, cultural dimensions of classification and cognition, identity, gender
- SH2_4 Myth, ritual, symbolic representations, religious studies
- SH2_5 Democratization, social movements
- SH2_6 Violence, conflict and conflict resolution
- SH2_7 Political systems and institutions, governance
- SH2_8 Legal theory, legal systems, constitutions, comparative law
- SH2_9 Global and transnational governance, international studies, human rights
- SH2_10 Communication networks, media, information society
- SH2_11 Social studies of science and technology, science, technology and innovation policies

SH3 Environment, space and population: environmental studies, demography, social geography, urban and regional studies

- SH3_1 Environment, resources and sustainability
- SH3_2 Environmental change and society
- SH3_3 Environmental regulations and climate negotiations
- SH3_4 Social and industrial ecology
- SH3_5 Population dynamics, health and society
- SH3_6 Families and households
- SH3_7 Migration
- SH3_8 Mobility, tourism, transportation and logistics
- SH3_9 Spatial development, land use, regional planning

- SH3_10 Urbanization, cities and rural areas
- SH3_11 Infrastructure, human and political geography, settlements
- SH3_12 Geo-information and spatial data analysis

SH4 The Human Mind and its complexity: cognition, psychology, linguistics, philosophy and education

- SH4_1 Evolution of mind and cognitive functions, animal communication
- SH4_2 Human life-span development
- SH4_3 Neuropsychology and clinical psychology
- SH4_4 Cognitive and experimental psychology: perception, action, and higher cognitive processes
- SH4_5 Linguistics: formal, cognitive, functional and computational linguistics
- SH4_6 Linguistics: typological, historical and comparative linguistics
- SH4_7 Psycholinguistics and neurolinguistics: acquisition and knowledge of language, language pathologies
- SH4_8 Use of language: pragmatics, sociolinguistics, discourse analysis, second language teaching and learning, lexicography, terminology
- SH4_9 Philosophy, history of philosophy
- SH4_10 Epistemology, logic, philosophy of science
- SH4_11 Ethics and morality, bioethics
- SH4_12 Education: systems and institutions, teaching and learning

SH5 Cultures and cultural production: literature, visual and performing arts, music, cultural and comparative studies

- SH5_1 Classics, ancient Greek and Latin literature and art
- SH5_2 History of literature
- SH5_3 Literary theory and comparative literature, literary styles
- SH5_4 Textual philology and palaeography
- SH5_5 Visual arts
- SH5_6 Performing arts
- SH5_7 Museums and exhibitions
- SH5_8 Music and musicology, history of music
- SH5_9 History of art and history of architecture
- SH5_10 Cultural studies, cultural diversity
- SH5_11 Cultural heritage, cultural memory

SH6 The study of the human past: archaeology, history and memory

- SH6_1 Archaeology, archaeometry, landscape archaeology
- SH6_2 Prehistory and protohistory
- SH6_3 Ancient history
- SH6_4 Medieval history
- SH6_5 Early modern history
- SH6_6 Modern and contemporary history
- SH6_7 Colonial and post-colonial history, global and transnational history
- SH6_8 Social and economic history
- SH6_9 History of ideas, intellectual history, history of sciences and techniques
- SH6_10 Cultural history
- SH6_11 History of collective identities and memories, history of gender

