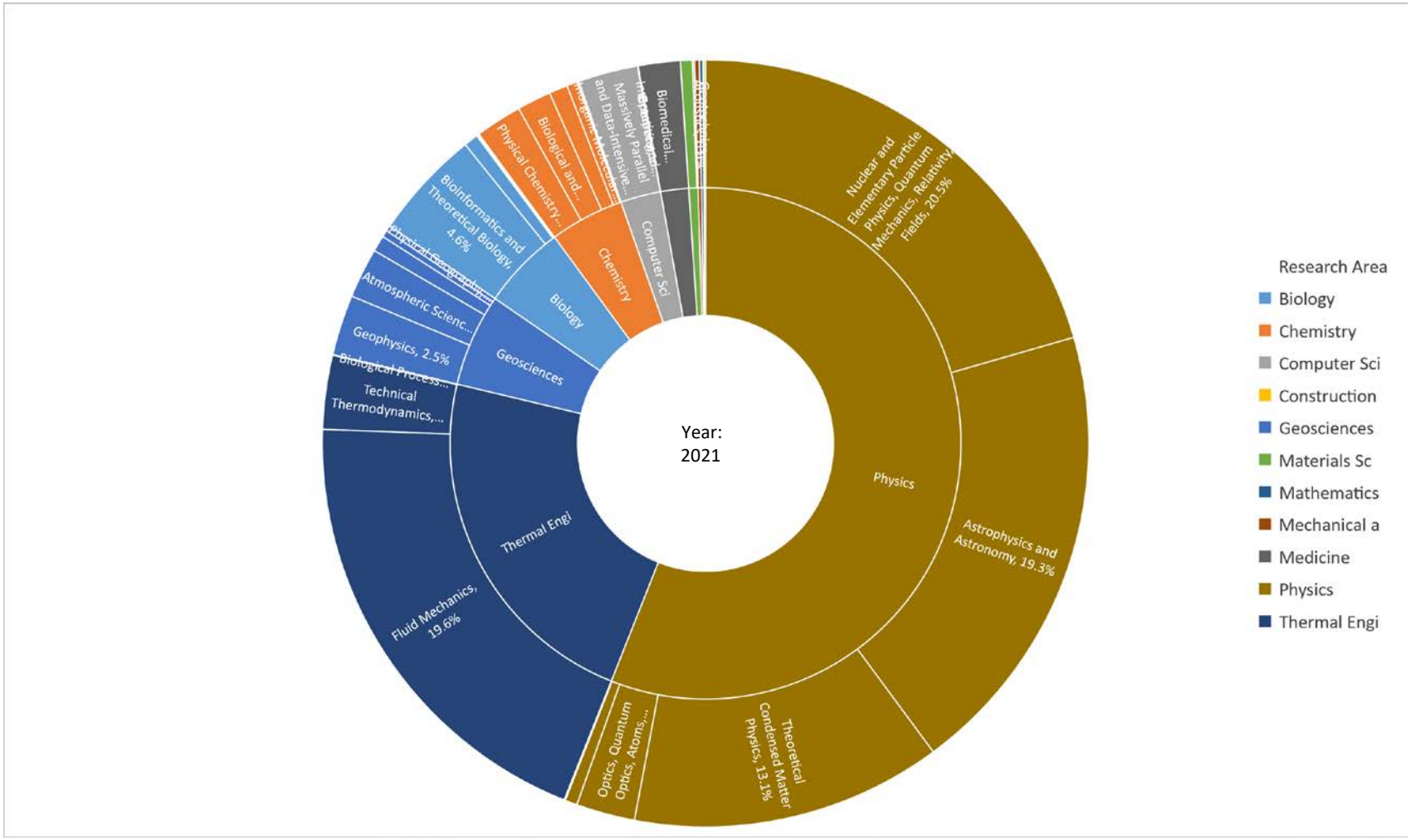
SuperMUC-NG
Usage Report

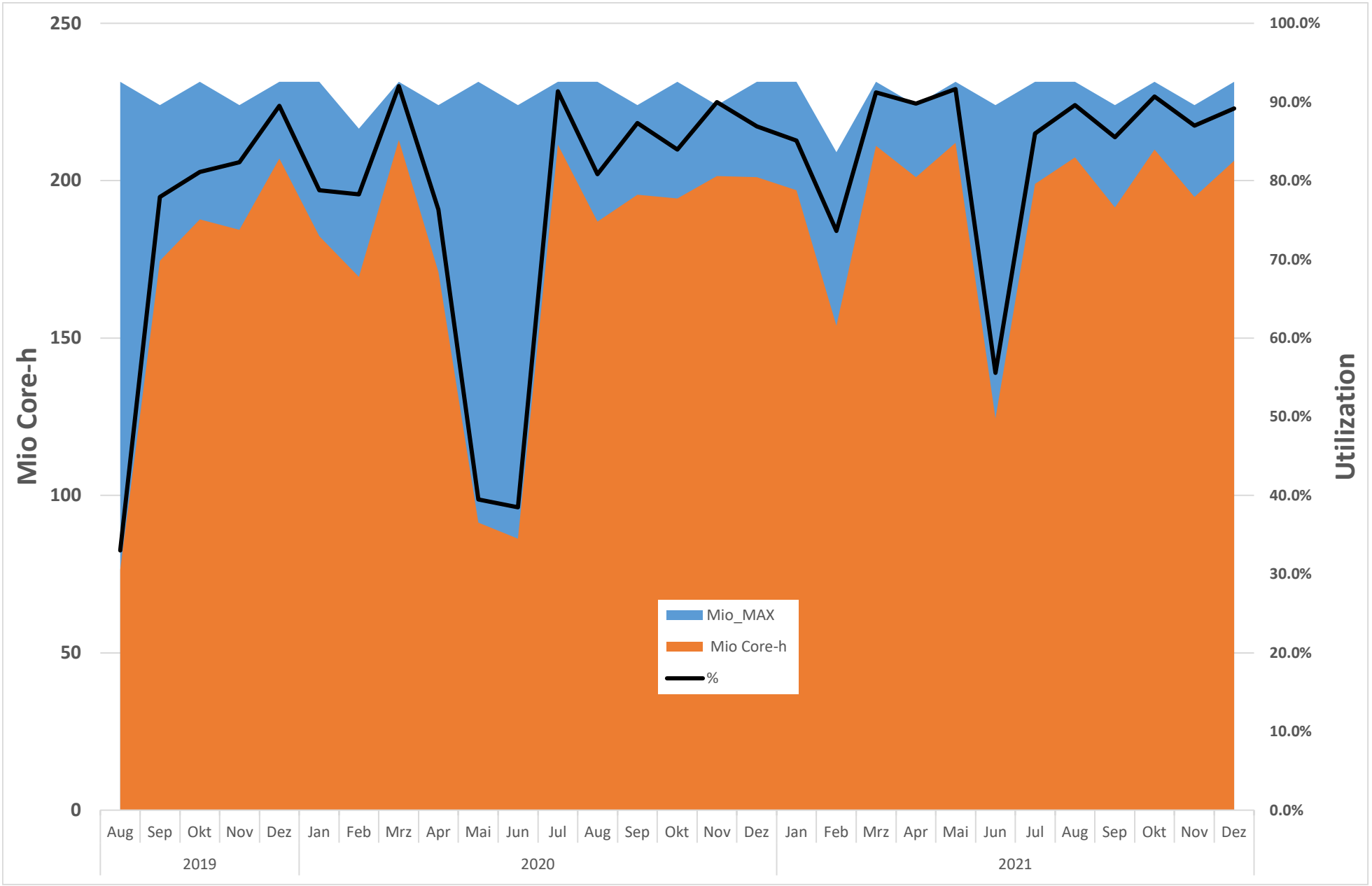


Usage by Month

Usage

Date	Mio_MAX	Mio Core-h	%	Jobs
2021	**2724.7**	**2308.5**	**84.6%**	**684638**
Jan	231.4	196.9	85.1%	49337
Feb	209.0	153.9	73.6%	33262
Mrz	231.4	211.1	91.2%	42485
Apr	223.9	201.0	89.8%	36112
Mai	231.4	212.0	91.6%	33933
Jun	223.9	124.5	55.6%	26573
Jul	231.4	199.0	86.0%	46100
Aug	231.4	207.4	89.6%	34126
Sep	223.9	191.5	85.5%	35375
Okt	231.4	209.9	90.7%	33786
Nov	223.9	194.9	87.0%	25767
Dez	231.4	206.3	89.2%	287782
2020	**2732.2**	**2104.1**	**77.0%**	**659920**
Jan	231.4	182.4	78.8%	89838
Feb	216.5	169.4	78.3%	61502
Mrz	231.4	212.9	92.0%	55216
Apr	223.9	170.9	76.3%	80881
Mai	231.4	91.3	39.5%	49271
Jun	223.9	86.2	38.5%	23801
Jul	231.4	211.4	91.4%	48823
Aug	231.4	187.0	80.8%	24603
Sep	223.9	195.5	87.3%	40965
Okt	231.4	194.3	84.0%	69044
Nov	223.9	201.5	90.0%	50772
Dez	231.4	201.1	86.9%	65204
2019	**1142.1**	**830.1**	**72.8%**	**181474**
Aug	231.4	76.4	33.0%	8820
Sep	223.9	174.5	77.9%	33770
Okt	231.4	187.7	81.1%	42718
Nov	223.9	184.4	82.4%	35553
Dez	231.4	207.1	89.5%	60613
Total	**6599.0**	**5242.6**	**79.4%**	**1526032**

Mio_Max = max of potential usage
= walltime of month * number of cores
% = utilization = % of Max = Mio Core-h/Mio MAX


250
200
150
100
50
0
Mio Core-h
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
Utilization
Mio_MAX
Mio Core-h
%
Aug Sep Okt Nov Dez Jan Feb Mrz Apr Mai Jun Jul Aug Sep Okt Nov Dez Jan Feb Mrz Apr Mai Jun Jul Aug Sep Okt Nov Dez
2019
2020
2021

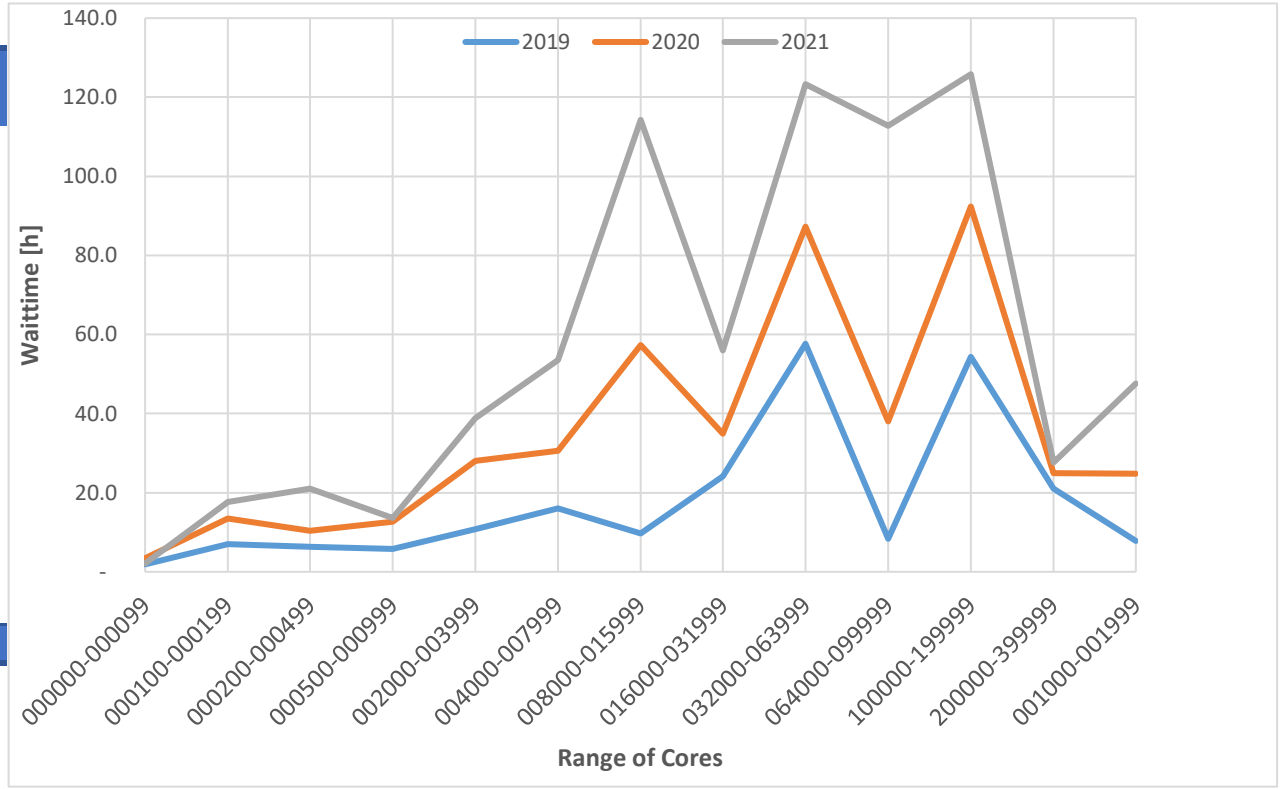
Usage (core-h) by Job size

Usage by Job Size Range of cores	2019	2020	2021	Total
000000-000099	0.5%	0.8%	0.5%	0.6%
000100-000199	1.2%	1.3%	1.0%	1.2%
000200-000499	3.8%	4.6%	2.5%	3.5%
000500-000999	5.6%	9.7%	10.3%	9.3%
001000-001999	10.0%	13.0%	11.2%	11.7%
002000-003999	12.4%	17.6%	9.2%	13.1%
004000-007999	20.2%	14.7%	12.0%	14.4%
008000-015999	12.1%	12.2%	14.2%	13.1%
016000-031999	15.6%	7.0%	12.7%	10.9%
032000-063999	15.6%	9.4%	11.8%	11.4%
064000-099999	1.8%	6.0%	4.1%	4.5%
100000-199999	0.7%	2.5%	9.8%	5.4%
200000-399999	0.3%	1.2%	0.8%	0.9%
Total	100.0%	100.0%	100.0%	100.0%

Wait time by Jobsize

Average Wait Time [hours] by Jobsize

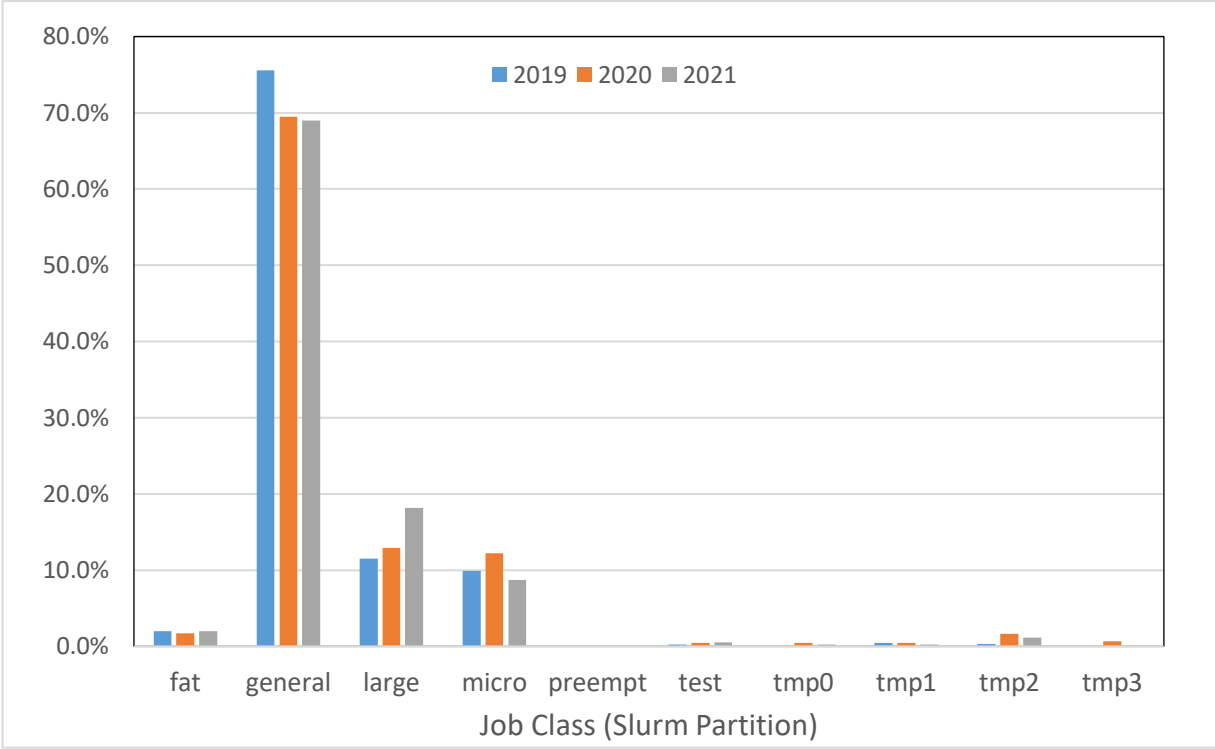
Avg. Wait Time [h] Jobsize [cores}]	2019	2020	2021	Total
000000-000099	1.9	3.4	2.1	2.5
000100-000199	7.0	13.5	17.7	12.7
000200-000499	6.4	10.4	21.0	12.6
000500-000999	5.7	12.7	13.7	10.7
002000-003999	10.8	28.1	38.9	25.9
004000-007999	16.0	30.7	53.5	33.4
008000-015999	9.6	57.3	114.3	60.4
016000-031999	24.2	34.9	56.0	38.3
032000-063999	57.7	87.3	123.4	89.4
064000-099999	8.3	38.0	112.7	53.0
100000-199999	54.4	92.4	125.8	90.9
200000-399999	21.0	24.9	27.6	24.5
001000-001999	7.8	24.8	47.6	26.7
Total	**17.8**	**35.3**	**58.0**	**37.0**



Usage by Job Class

% Usage (core-h) by Jobclass

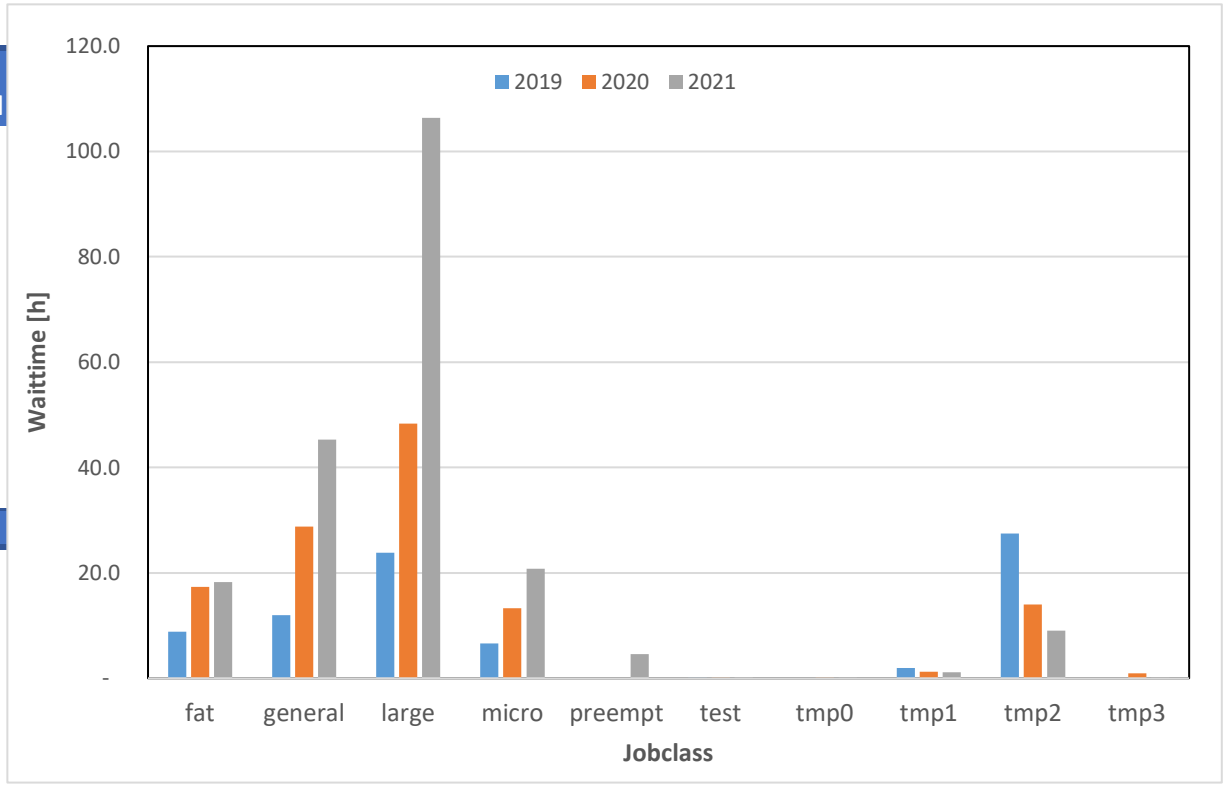
Usage	2019	2020	2021	Total
fat	2.0%	1.7%	2.0%	1.9%
general	75.6%	69.5%	69.0%	70.2%
large	11.5%	12.9%	18.2%	15.0%
micro	9.9%	12.2%	8.7%	10.3%
preempt	0.0%	0.0%	0.0%	0.0%
test	0.2%	0.5%	0.5%	0.5%
tmp0	0.0%	0.5%	0.2%	0.3%
tmp1	0.5%	0.4%	0.2%	0.3%
tmp2	0.3%	1.7%	1.1%	1.2%
tmp3	0.0%	0.6%	0.0%	0.3%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**



Waittime by Job Class

Average Wait Time [hours] by Jobclass

Avg Wait_h	2019	2020	2021	Total
fat	8.8	17.3	18.3	14.8
general	12.0	28.8	45.3	28.7
large	23.9	48.4	106.3	59.5
micro	6.6	13.3	20.8	13.5
preempt	na	na	4.6	4.6
test	0.1	0.1	0.1	0.1
tmp0	na	0.2	0.0	0.1
tmp1	2.0	1.2	1.2	1.4
tmp2	27.5	14.0	9.1	16.9
tmp3	na	1.0	0.0	0.5
Total	**11.5**	**13.8**	**20.6**	**15.8**



Usage by Research Area (DFG Classification Level 2, 3 and 4)

LV2 LV3 LV4

Usage	2019	2020	2021	Total
Physics	**57.8%**	**52.9%**	**56.0%**	**55.0%**
Particles, Nuclei and Fields	**26.8%**	**25.8%**	**20.5%**	**23.7%**
Nuclear and Elementary Particle Physics, Quantum Mechanics, Relativity, Fields	26.8%	25.8%	20.5%	23.7%
Astrophysics and Astronomy	**20.8%**	**16.7%**	**19.3%**	**18.5%**
Astrophysics and Astronomy	20.8%	16.7%	19.3%	18.5%
Condensed Matter Physics	**9.7%**	**8.2%**	**13.6%**	**10.8%**
Theoretical Condensed Matter Physics	9.7%	7.4%	13.1%	10.3%
Experimental Condensed Matter Physics	0.0%	0.8%	0.5%	0.5%
Optics, Quantum Optics and Physics of Atoms, Molecules and Plasmas	**0.5%**	**2.1%**	**2.5%**	**2.0%**
Optics, Quantum Optics, Atoms, Molecules, Plasmas	0.5%	2.1%	2.5%	2.0%
Statistical Physics, Soft Matter, Biological Physics, Nonlinear Dynamics	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Statistical Physics, Soft Matter, Biological Physics, Nonlinear Dynamics	0.0%	0.0%	0.0%	0.0%
Thermal Engineering/ Process Engineering	**27.1%**	**27.8%**	**22.7%**	**25.5%**
Heat Energy Technology, Thermal Machines, Fluid Mechanics	**27.1%**	**27.3%**	**22.7%**	**25.2%**
Fluid Mechanics	27.0%	22.7%	19.6%	22.0%
Technical Thermodynamics	0.1%	4.4%	3.1%	3.1%
Energy Process Engineering	0.0%	0.2%	0.0%	0.1%
Process Engineering, Technical Chemistry	**0.1%**	**0.5%**	**0.0%**	**0.2%**
Biological Process Engineering	0.1%	0.5%	0.0%	0.2%
Chemical and Thermal Process Engineering	0.0%	0.0%	0.0%	0.0%
Biology	**4.2%**	**5.2%**	**5.3%**	**5.1%**
Basic Biological and Medical Research	**4.2%**	**5.2%**	**5.3%**	**5.1%**
Bioinformatics and Theoretical Biology	1.8%	2.1%	4.6%	3.2%
Biophysics	1.1%	2.5%	0.6%	1.5%
Biochemistry	1.3%	0.5%	0.1%	0.4%
General Genetics	0.1%	0.0%	0.0%	0.0%
Cell Biology	0.0%	0.0%	0.0%	0.0%
Zoology	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Evolution, Anthropology	0.0%	0.0%	0.0%	0.0%
Geosciences	**4.9%**	**2.6%**	**5.9%**	**4.4%**
Geophysics and Geodesy	**0.9%**	**1.3%**	**3.2%**	**2.1%**

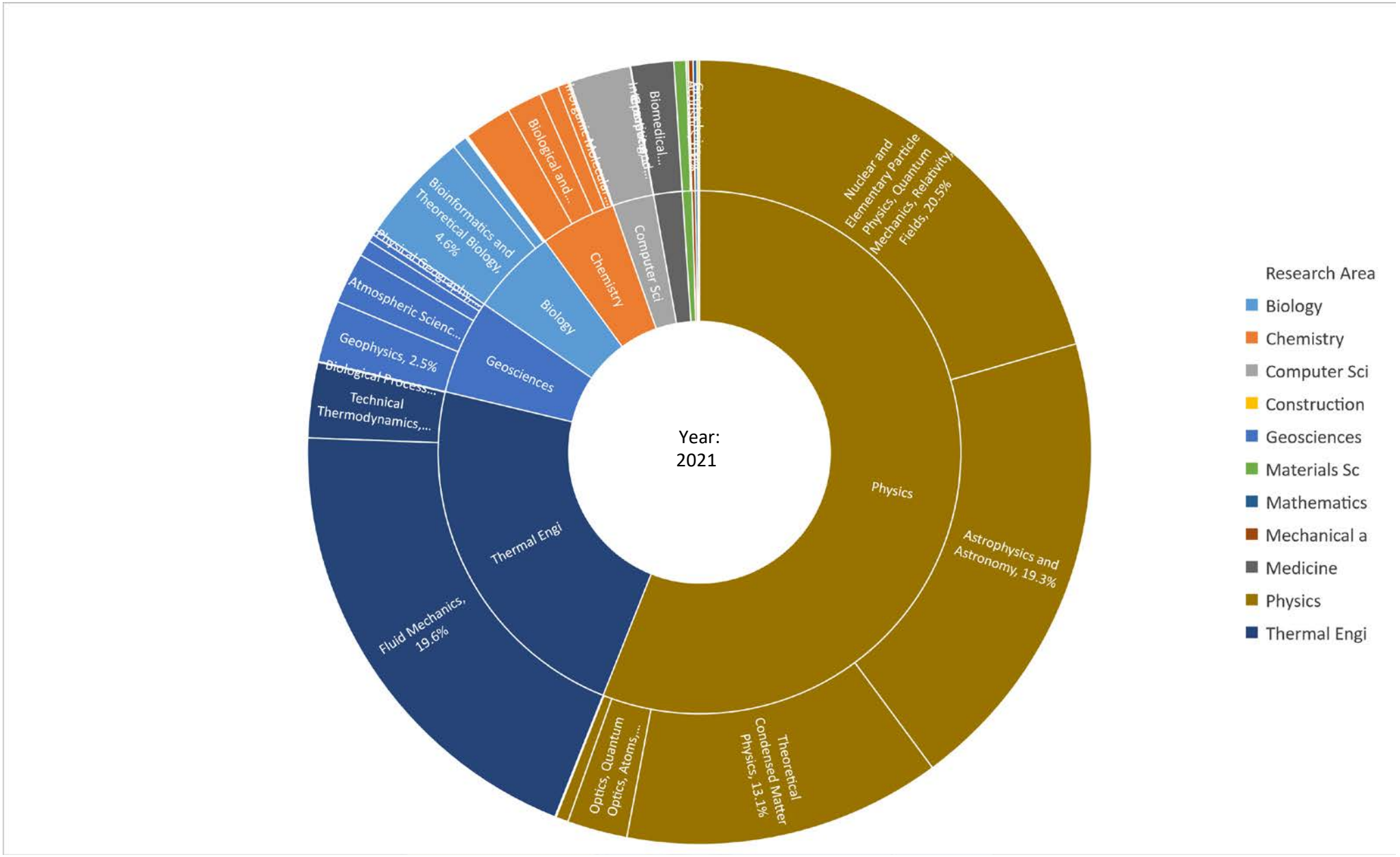
Usage by Research Area

Ge	Ge Geophysics	0.5%	0.8%	2.5%	1.5%
	Geodesy, Photogrammetry, Remote Sensing, Geoinformatics, Cartography	0.3%	0.5%	0.7%	0.5%
	Atmospheric Science, Oceanography and Climate Research	**0.9%**	**0.3%**	**2.1%**	**1.2%**
	Atmospheric Science	0.9%	0.3%	2.1%	1.2%
	Geochemistry, Mineralogy and Crystallography	**3.2%**	**0.9%**	**0.3%**	**1.0%**
	Geochemistry, Mineralogy and Crystallography	3.2%	0.9%	0.3%	1.0%
	Water Research	**0.0%**	**0.0%**	**0.2%**	**0.1%**
	Hydrogeology, Hydrology, Limnology, Urban Water Management, Water Chemistry, Integrated Water Resources Management	0.0%	0.0%	0.2%	0.1%
	Geography	**0.0%**	**0.0%**	**0.0%**	**0.0%**
	Physical Geography	0.0%	0.0%	0.0%	0.0%
Chemistry		**1.2%**	**5.0%**	**4.7%**	**4.3%**
	Physical and Theoretical Chemistry	**0.3%**	**1.3%**	**2.7%**	**1.8%**
	Physical Chemistry of Molecules, Interfaces and Liquids - Spectroscopy, Kinetics	0.0%	0.4%	2.0%	1.0%
	General Theoretical Chemistry	0.3%	0.9%	0.8%	0.8%
	Biological Chemistry and Food Chemistry	**0.0%**	**2.3%**	**1.4%**	**1.5%**
	Biological and Biomimetic Chemistry	0.0%	2.3%	1.4%	1.5%
	Chemical Solid State and Surface Research	**0.9%**	**1.5%**	**0.5%**	**1.0%**
	Theory and Modelling	0.9%	1.5%	0.4%	0.9%
	Physical Chemistry of Solids and Surfaces, Material Characterisation	0.0%	0.0%	0.1%	0.0%
	Solid State and Surface Chemistry, Material Synthesis	0.0%	0.0%	0.0%	0.0%
	Molecular Chemistry	**0.0%**	**0.0%**	**0.0%**	**0.0%**
	Inorganic Molecular Chemistry	0.0%	0.0%	0.0%	0.0%
Computer Science, Systems and Electrical Engineering		**2.3%**	**1.9%**	**2.5%**	**2.2%**
	Computer Science	**2.3%**	**1.9%**	**2.5%**	**2.2%**
	Massively Parallel and Data-Intensive Systems	2.2%	1.9%	2.5%	2.2%
	Interactive and Intelligent Systems, Image and Language Processing, Computer Graphics and Visualisation	0.1%	0.0%	0.0%	0.0%
	Theoretical Computer Science	0.0%	0.0%	0.0%	0.0%
	Computer Architecture and Embedded Systems	0.0%	0.0%	0.0%	0.0%
	Operating, Communication, Database and Distributed Systems	0.0%	0.0%	0.0%	0.0%
Medicine		**0.6%**	**1.9%**	**1.8%**	**1.6%**
	Medicine	**0.6%**	**1.9%**	**1.8%**	**1.6%**
	Biomedical Technology and Medical Physics	0.6%	1.9%	1.8%	1.6%
	Epidemiology, Medical Biometry, Medical Informatics	0.0%	0.0%	0.0%	0.0%
	Microbiology, Virology and Immunology	**0.0%**	**0.0%**	**0.0%**	**0.0%**
	Virology	0.0%	0.0%	0.0%	0.0%

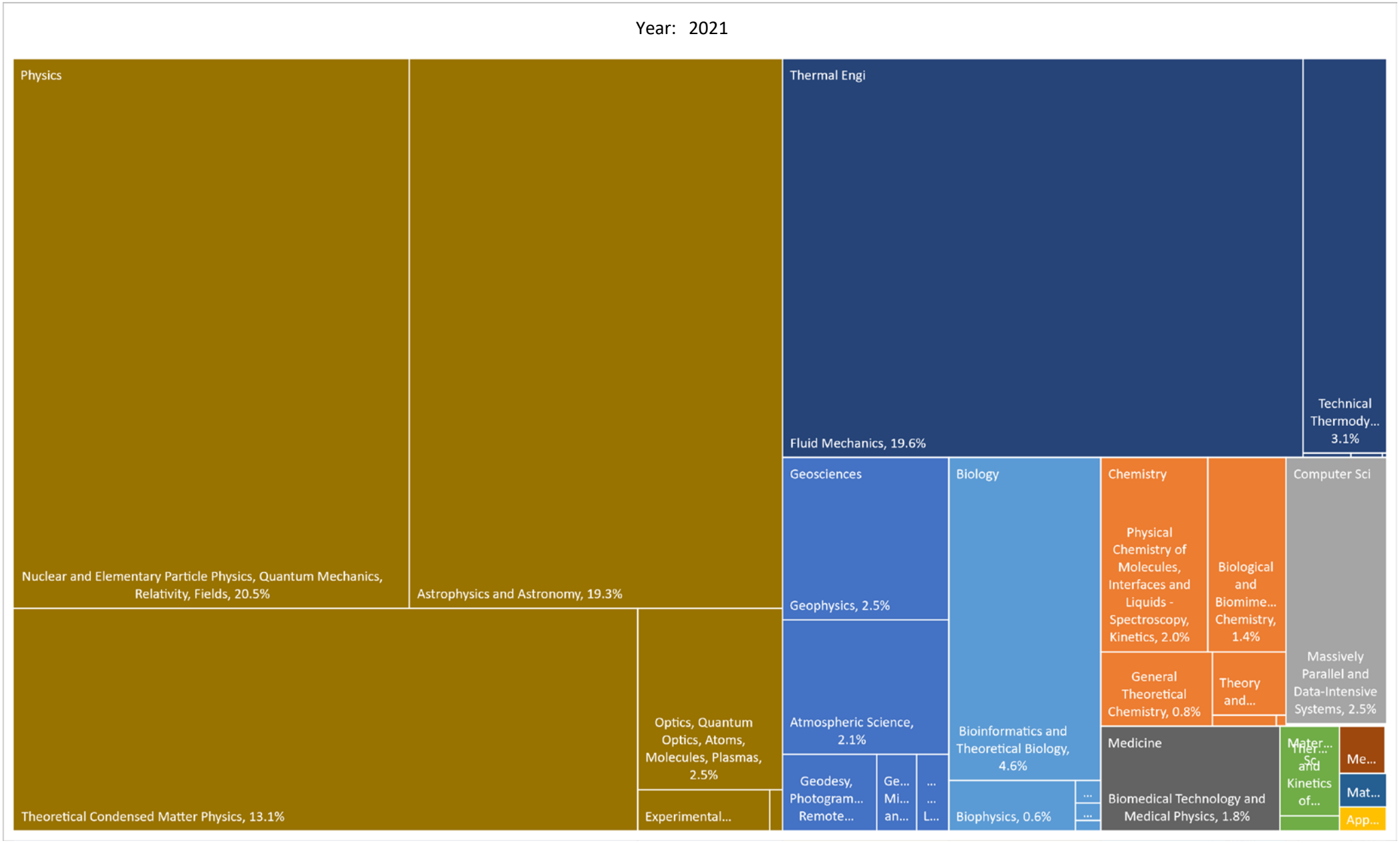
Usage by Research Area

Materials Science and Engineering	**1.5%**	**1.5%**	**0.6%**	**1.1%**
Materials Science	**1.5%**	**1.5%**	**0.6%**	**1.1%**
Thermodynamics and Kinetics of Materials	1.5%	1.5%	0.5%	1.1%
Biomaterials	0.0%	0.0%	0.1%	0.1%
Mechanical and Industrial Engineering	**0.1%**	**0.9%**	**0.2%**	**0.5%**
Mechanics and Constructive Mechanical Engineering	**0.1%**	**0.9%**	**0.2%**	**0.5%**
Mechanics	0.1%	0.9%	0.2%	0.5%
Acoustics	0.0%	0.0%	0.0%	0.0%
Engineering Design, Machine Elements, Product Development	0.0%	0.0%	0.0%	0.0%
Mathematics	**0.2%**	**0.1%**	**0.1%**	**0.1%**
Mathematics	**0.2%**	**0.1%**	**0.1%**	**0.1%**
Mathematics	0.2%	0.1%	0.1%	0.1%
Construction Engineering and Architecture	**0.1%**	**0.1%**	**0.1%**	**0.1%**
Construction Engineering and Architecture	**0.1%**	**0.1%**	**0.1%**	**0.1%**
Applied Mechanics, Statics and Dynamics	0.1%	0.1%	0.1%	0.1%
Geotechnics, Hydraulic Engineering	0.0%	0.0%	0.0%	0.0%
Agriculture, Forestry and Veterinary Medicine	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Agriculture, Forestry and Veterinary Medicine	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Basic Research on Pathogenesis, Diagnostics and Therapy and Clinical Veterinary Medicine	0.0%	0.0%	0.0%	0.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Usage by Research Area (DFG Level 2 and 3)



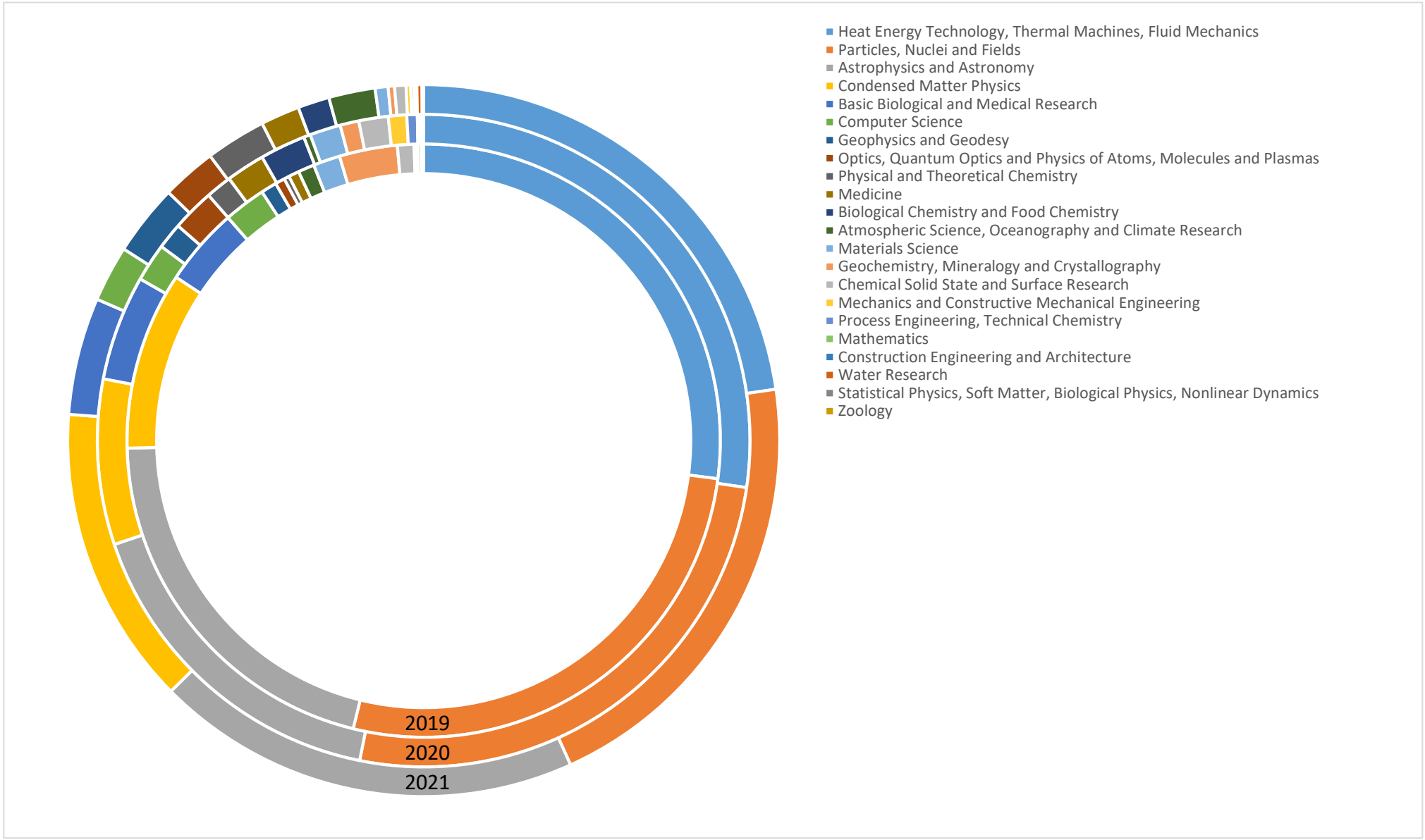
Usage by Research Area (DFG Level 2 and 3)

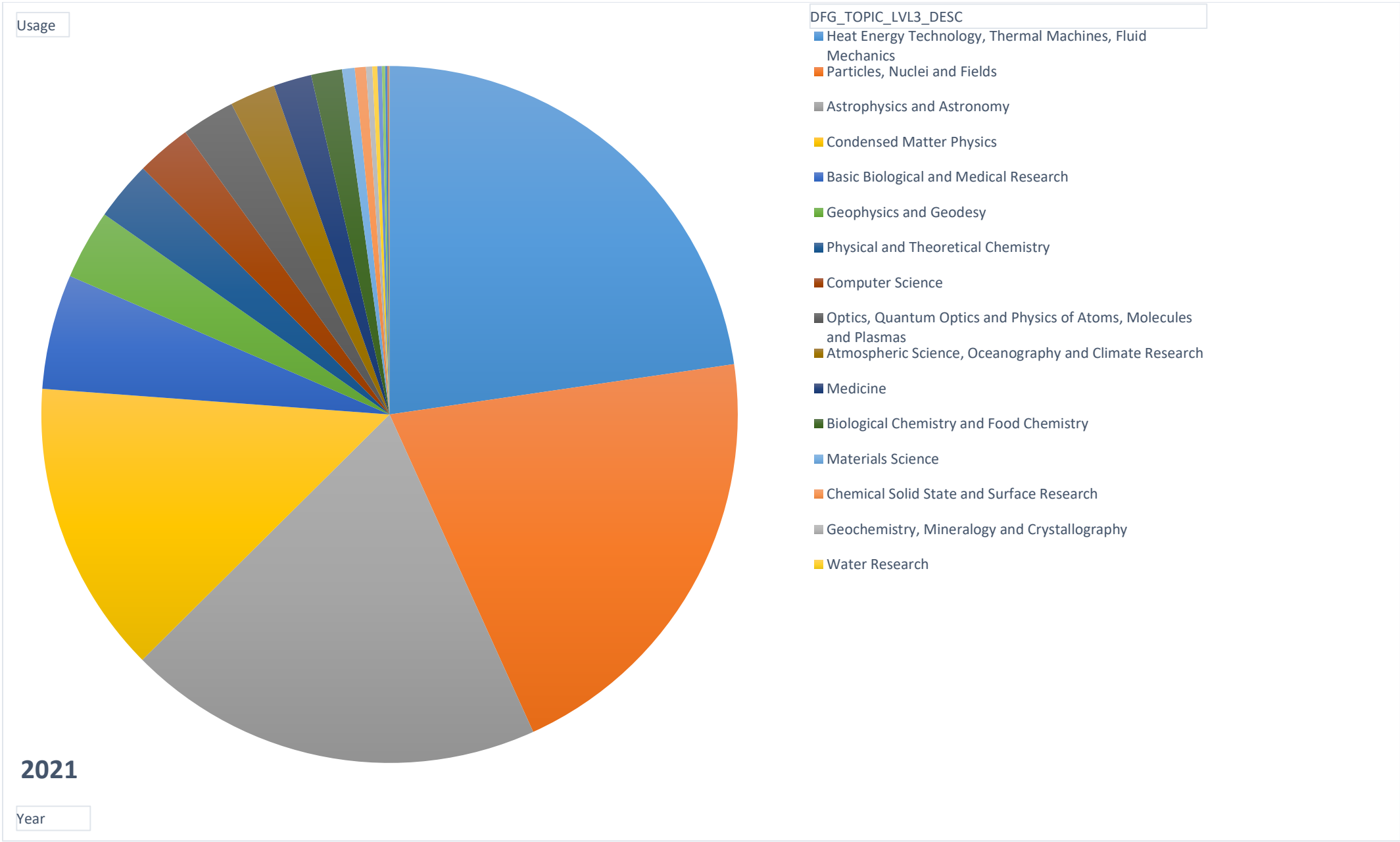


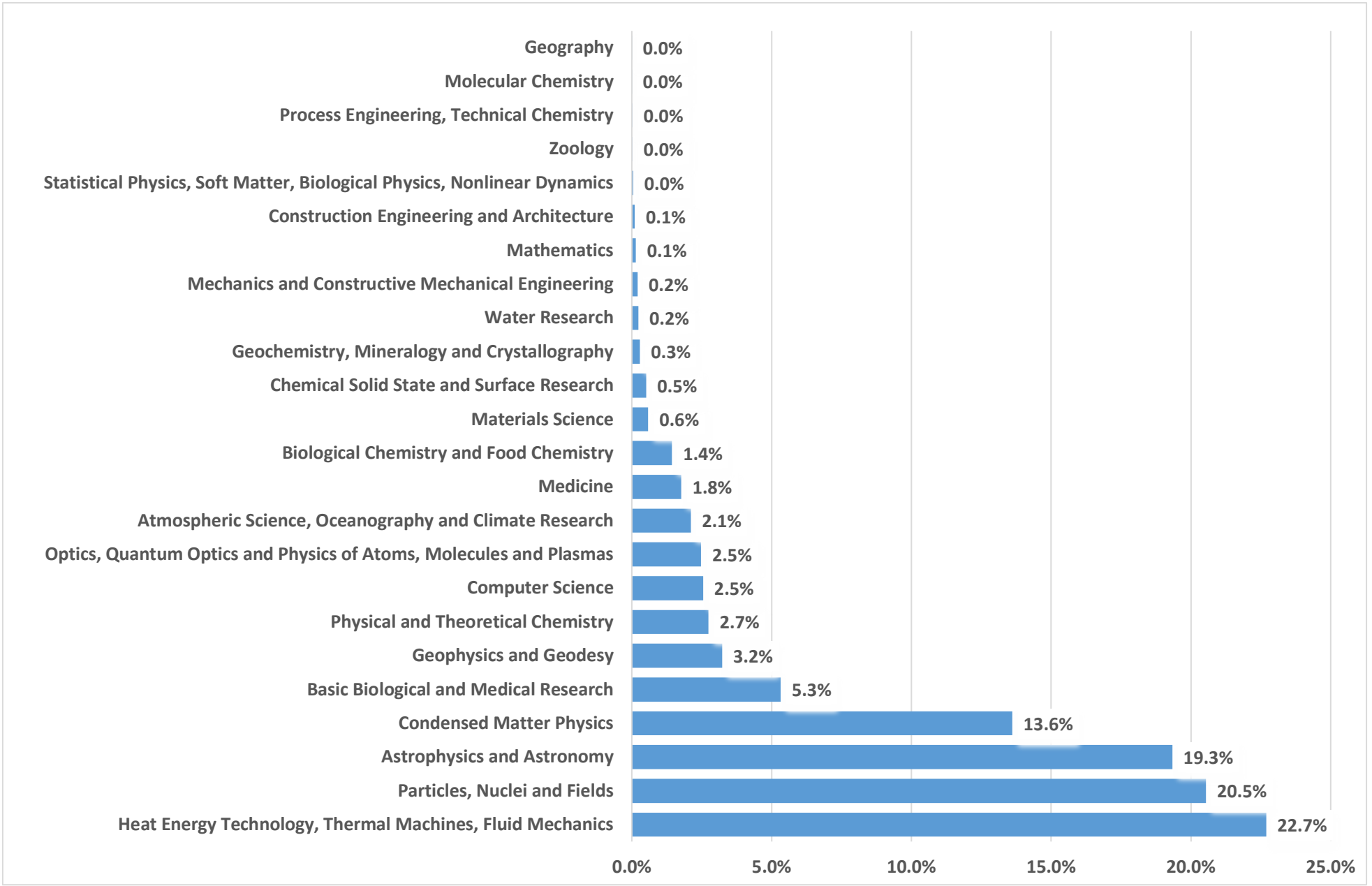
Usage by research Area (DFG Level 3)

Usage	Year			
DFG_TOPIC_LVL3_DESC	2019	2020	2021	Total
Heat Energy Technology, Thermal Machines, Fluid Mechanics	27.1%	27.3%	22.7%	25.2%
Particles, Nuclei and Fields	26.8%	25.8%	20.5%	23.7%
Astrophysics and Astronomy	20.8%	16.7%	19.3%	18.5%
Condensed Matter Physics	9.7%	8.2%	13.6%	10.8%
Basic Biological and Medical Research	4.2%	5.2%	5.3%	5.1%
Computer Science	2.3%	1.9%	2.5%	2.2%
Geophysics and Geodesy	0.9%	1.3%	3.2%	2.1%
Optics, Quantum Optics and Physics of Atoms, Molecules and Plasmas	0.5%	2.1%	2.5%	2.0%
Physical and Theoretical Chemistry	0.3%	1.3%	2.7%	1.8%
Medicine	0.6%	1.9%	1.8%	1.6%
Biological Chemistry and Food Chemistry	0.0%	2.3%	1.4%	1.5%
Atmospheric Science, Oceanography and Climate Research	0.9%	0.3%	2.1%	1.2%
Materials Science	1.5%	1.5%	0.6%	1.1%
Geochemistry, Mineralogy and Crystallography	3.2%	0.9%	0.3%	1.0%
Chemical Solid State and Surface Research	0.9%	1.5%	0.5%	1.0%
Mechanics and Constructive Mechanical Engineering	0.1%	0.9%	0.2%	0.5%
Process Engineering, Technical Chemistry	0.1%	0.5%	0.0%	0.2%
Mathematics	0.2%	0.1%	0.1%	0.1%
Construction Engineering and Architecture	0.1%	0.1%	0.1%	0.1%
Water Research	0.0%	0.0%	0.2%	0.1%
Statistical Physics, Soft Matter, Biological Physics, Nonlinear Dynamics	0.0%	0.0%	0.0%	0.0%
Zoology	0.0%	0.0%	0.0%	0.0%
Molecular Chemistry	0.0%	0.0%	0.0%	0.0%
Agriculture, Forestry and Veterinary Medicine	0.0%	0.0%	0.0%	0.0%
Geography	0.0%	0.0%	0.0%	0.0%
Microbiology, Virology and Immunology	0.0%	0.0%	0.0%	0.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Usage By Research Area (DFG Lvevel 3)




Usage
DFG_TOPIC_LVL3_DESC
Heat Energy Technology, Thermal Machines, Fluid Mechanics
Particles, Nuclei and Fields
Astrophysics and Astronomy
Condensed Matter Physics
Basic Biological and Medical Research
Geophysics and Geodesy
Physical and Theoretical Chemistry
Computer Science
Optics, Quantum Optics and Physics of Atoms, Molecules and Plasmas
Atmospheric Science, Oceanography and Climate Research
Medicine
Biological Chemistry and Food Chemistry
Materials Science
Chemical Solid State and Surface Research
Geochemistry, Mineralogy and Crystallography
Water Research
2021
Year


Geography 0.0%
Molecular Chemistry 0.0%
Process Engineering, Technical Chemistry 0.0%
Zoology 0.0%
Statistical Physics, Soft Matter, Biological Physics, Nonlinear Dynamics 0.0%
Construction Engineering and Architecture 0.1%
Mathematics 0.1%
Mechanics and Constructive Mechanical Engineering 0.2%
Water Research 0.2%
Geochemistry, Mineralogy and Crystallography 0.3%
Chemical Solid State and Surface Research 0.5%
Materials Science 0.6%
Biological Chemistry and Food Chemistry 1.4%
Medicine 1.8%
Atmospheric Science, Oceanography and Climate Research 2.1%
Optics, Quantum Optics and Physics of Atoms, Molecules and Plasmas 2.5%
Computer Science 2.5%
Physical and Theoretical Chemistry 2.7%
Geophysics and Geodesy 3.2%
Basic Biological and Medical Research 5.3%
Condensed Matter Physics 13.6%
Astrophysics and Astronomy 19.3%
Particles, Nuclei and Fields 20.5%
Heat Energy Technology, Thermal Machines, Fluid Mechanics 22.7%
0.0% 5.0% 10.0% 15.0% 20.0% 25.0%