

1 **International Union of Geodesy and Geophysics (IUGG)**

2 **Activities' Report - 2020**

3 Fausto Guzzetti

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5 **1. Introduction**

6 The **International Union of Geodesy and Geophysics** (IUGG, <http://www.iugg.org/>) is
7 the international organization devoted to the advancement, promotion, and dissemination
8 of knowledge on the Earth system, its space environment and the dynamic processes that
9 cause changes. The Union consists of eight international associations and six thematic
10 commissions.

11 The **eight international associations** are:

- 12 • The International Association of Cryospheric Sciences (IACS);
- 13 • The International Association of Geodesy (IAG);
- 14 • The International Association of Geomagnetism and Aeronomy (IAGA);
- 15 • The International Association of Hydrological Sciences (IAHS);
- 16 • The International Association of Meteorology and Atmospheric Sciences (IAMAS);
- 17 • The International Association for the Physical Sciences of the Oceans (IAPSO);
- 18 • The International Association of Seismology and Physics of the Earth's Interior
19 (IASPEI);
- 20 • The International Association of Volcanology and Chemistry of the Earth's Interior
21 (IAVCEI).

22 The **six commissions** are:

- 23 • Climatic and Environmental Changes (CCEC);
- 24 • Mathematical Geophysics (CMG);
- 25 • Geophysical Risk and Sustainability (GRC);
- 26 • Study of the Earth's Deep Interior (SEDI);
- 27 • Data and Information (UCDI);
- 28 • Planetary Sciences (UCPS).

29 The National Representatives to the **International Union of Geodesy and Geophysics**
30 and its **eight international associations** (IACS, IAG, AIGA, IAHS, IAMAS, IAPSO,
31 IASPEI, IAVCEI) are:

32 For the **International Union of Geodesy and Geophysics** (IUGG), Fausto GUZZETTI
33 delegate, Claudia PASQUERO substitute.

34 For the **International Association of Cryospheric Sciences** (IACS) Barbara STENNI
35 delegate, Giovanni MACELLONI substitute.

36 For the **International Association for Geodesy (IAG)**, Mattia CRESPI Delegate, Paolo
37 MESSINA substitute.

38 For the **International Association of Geomagnetism and Aeronomy (IAGA/IUGG)**,
39 Umberto VILLANTE delegate, and Luigi VIGLIOTTI substitute.

40 For the **International Association of Hydrogeological Sciences (IAHS/IUGG)**, Alberto
41 MONTANARI delegate, Tommaso MORAMARCO substitute.

42 For the **International Association of Meteorological and Atmospheric Sciences**
43 **(IAMAS/IUGG)**, Marcello MIGLIETTA delegate, Massimiliano PASQUI substitute.

44 For the **International Association of Physical Sciences of the Ocean (IAPSO/IUGG)**,
45 Katrin SCHROEDER delegate, Andrea CUCCO substitute.

46 For the **International Association of Seismology and Physics of Earth's Interior**
47 **(IASPEI/IUGG)**, Warner MARZOCCHI delegate, Andrea ARGNANI substitute.

48 For the **International Association of Volcanology and Chemistry of the Earth's**
49 **Interior (IAVCEI/IUGG)**, Giuseppe DE NATALE delegate, Claudia PRINCIPE
50 substitute.

51 **2. Main activities carried on by the IUGG during 2020 relevant for Italy and for** 52 **CNR**

53 The Covid-19 pandemic has inevitably limited the Union's activities, particularly
54 regarding national and international meetings, some of which have been cancelled and
55 others postponed to 2021.

56 Despite the difficulties, the Union has continued its information and coordination
57 activities with the Associations, and with other international scientific organisations and
58 bodies, and with the International Science Council (ISC), of which the IUGG and CNR
59 are members.

60 The Union has endorsed the "Kyoto 2020 commitment for global promotion of
61 understanding and reducing landslide disaster risk" promoted by the International
62 Consortium on Landslides (ICL).

63 In 2020, the IUGG financially supported eight scientific events, none in Italy.

64 **3. Activities carried on by the Italian Delegate within the Union during 2020 and** 65 **impact on the Italian scientific community**

66 By order of CNR President No. 11/2019 of 11 February 2019, prot. 0009953, I was
67 appointed as national Delegate to the IUGG. Subsequently, I was appointed Chairman of
68 the CNR - IUGG National Commission.

69 In 2020, my activities as national representative of the IUGG were severely limited due
70 to the Covid-19 pandemic. Since 1 December 2019, I have been Director of Office III,
71 Technical and Scientific Activities for Risk Prediction and Prevention, of the Italian
72 Department of Civil Protection. The new position in the Civil Protection Department has
73 given me a special insight into the use of scientific research and technological
74 developments on natural and man-made hazards and their consequences. I consider the
75 activity to be of primary interest to the IUGG.

76 As part of the Union's activities, on the request of the IUGG President, I took part to the
77 interne votes to appoint the new IUGG liaison officers to (i) the Consultative Committee
78 for Time and Frequency (CCTF) - Felix PEROSANZ, and to (ii) the ISC World Data
79 System (WDS) - Kirsten ELGER.

80 **4. Evaluation of the participation in terms of benefits and membership cost**

81 Despite the limited activities executed during 2020, due to the continuing pandemic
82 emergency that has affected Italy and, more generally, the whole world, with major
83 restrictions on research & development activities, and on the exchange of data, ideas, and
84 information, the evaluation of the Italian participation to the Union remains positive. The
85 Union membership fee paid by CNR covers both participation in the activities of the
86 Union and in its eight international Associations, which therefore have no additional
87 membership costs. This is particularly relevant for the younger associations, which are
88 still not very well established in Italy, and which need organisational support to grow and
89 establish as reference points in the Italian scientific community.

90 **5. Evaluation of Italians' attendance and how to improve interest and** 91 **involvement**

92 The Italian scientific community is heavily involved in the activities of the Union, both
93 at organisational and scientific levels. The Italian community is also active in other
94 scientific, technical, and research organisations close to the topics dealt with by the Union
95 and its Associations, and in particular – though by no means exclusively – in the European
96 Geosciences Union (EGU) and the American Geophysical Union (AGU).

97 **6. Italian experts with important roles within the Union or within related** 98 **Commissions and Programs, or in related scientific Unions**

99 In addition to the national delegates, the following Italian researchers participate in
100 leading positions to the Union, in related committees and programmes, and in the
101 activities of other scientific associations related to the activities of the Union and its
102 associations.

- 103 • Carlo BARBANTE is national delegate to the IUGG International Arctic Science
104 Committee (IASC).
- 105 • Carlo BARONI, is national delegate to the Scientific Committee on Antarctic Research
106 (SCAR).
- 107 • Giorgio BUDILLON is national delegate to the Southern Ocean Observing System
108 (SOOS), and national delegate to the Scientific Committee on Antarctic Research
109 (SCAR)
- 110 • Sandro CARNIEL is deputy president of the EGU Division on Division on Ocean
111 Sciences (EGU OS).
- 112 • Paolo DE BERNARDIS is national delegate to the Scientific Committee on Antarctic
113 Research (SCAR).
- 114 • Raffaella D'AMICIS is vice-chair of the Panel on Capacity Building (PCB),
115 Committee on Space Research (COSPAR).

- 116 • Giorgiana DE FRANCESCHI is chair of the Scientific Committee on Antarctic
117 Research (SCAR) expert group on GNSS Research and Application for Polar
118 Environment (GRAPE) and vice-chair of Committee G of the Union Radio-
119 Scientifique Internationale (URSI).
- 120 • Alcide Giorgio Di SARRA is member of the International Radiation Commission
121 (IRC).
- 122 • Ennio FERRARI is vice president of the International Commission on Surface
123 Hydrology, International Association of Hydrological Sciences (ICSW/IAHS).
- 124 • Aldo FIORI is president of the International Commission for Ground Water,
125 International Association of Hydrological Sciences (ICGW/IAHS).
- 126 • Fabio FLORINDO is president of the EGU Division of Earth Magnetism & Rock
127 Physics (EGU- EMRP), and chairman of the Working Group I.2 “Paleomagnetism”
128 Division I - Internal Magnetic Fields of IAGA.
- 129 • Teodoro GEORGIADIS is member of the IUGG Capacity Building and Education
130 Committee.
- 131 • Giovanni MACELLONI is national delegate to (alternate) to the International Arctic
132 Science Committee, Italian Focal point for Global Cryosphere Watch of the World
133 Meteorological Organization (GCW-WMO) and national representative to the
134 Scientific Committee on Antarctic Research (SCAR).
- 135 • Massimo MATERASSI is national delegate to the Commission G della Union Radio-
136 Scientifique Internationale (URSI).
- 137 • Antonio MELONI is president of the National Scientific Commission for Antarctica.
- 138 • Alberto MONTANARI is president of the European Geosciences Union (EGU).
- 139 • Fernando NARDI is president of the Citizen AND HYdrology Working Group
140 (CandHy WG) of the International Association of Hydrological Sciences (IAHS).
- 141 • Claudia PASQUERO is member of the IUGG Commission on Mathematical
142 Geophysics (CMG).
- 143 • Paolo PORTO is president elect of the International Commission on Continental
144 Erosion of the International Association of Hydrological Sciences (ICCE/IAHS).
- 145 • Ilaria PROSDOCIMI is secretary of the International Commission on Statistical
146 Hydrology of the International Association of Hydrological Sciences (ICSH/IAHS).
- 147 • Paola RIVARO is national representative to the Southern Ocean Observing System
148 (SOOS)
- 149 • Vincenzo ROMANO is national expert in the Space UN Committee on the Peaceful
150 Uses of Outer Space (COPUOS), e co-coordinatore italiano della International Space
151 Weather Initiative (ISWI).
- 152 • Francesco SOLDOVIERI is deputy president of the EGU Division on Division on
153 Geosciences Instrumentation and Data Systems (EGU GI).
- 154 • Stefania SPARNOCCHIA is secretary general of the International Association for the
155 Physical Sciences of the Oceans (IAPSO), and liaison officer of IUGG/IAPSO to the
156 UNESCO Intergovernmental Oceanographic Commission.

- 157 • Roberto SULPIZIO è segretario e membro dello Executive Committee della
158 International Association of Volcanology and Chemistry of the Earth's Interior
159 (IAVCEI), e componente dello Scientific Program Committee (SPC) for the IUGG
160 General Assembly 2023 (IUGG2023).
- 161 • Paolo TAROLLI is deputy president of the EGU Division on Natural Hazards (EGU
162 NH).
- 163 • Flavia TAURO is president of the Working Group Measurements & Observations in
164 XXI Century (MOXXI), of the International Association of Hydrological Sciences
165 (IAHS).
- 166 • Elena THOT is deputy president della EGU Division on Hydrological Sciences (EGU
167 HS).
- 168 • Stefano TINTI è is member of the Joint Tsunami Commission of the International
169 Association for the Physical Sciences of the Oceans (IAPSO), International
170 Association of Seismology and Physics of the Earth's Interior (IASPEI), and
171 International Association of Volcanology and Chemistry of the Earth's Interior
172 (IAVCEI).
- 173 • Paola VANNUCCI is president of the EGU Division on Tectonics and Structural
174 Geology (EGU TS).
- 175 • Umberto VILLANTE is president of the Space Weather Italian Community (SWICo).
- 176 • Elena VOLPI is president elect of the International Commission on Statistical
177 Hydrology of the International Association of Hydrological Sciences (ICSH/IAHS).
- 178 • Claudio ZACCONE is president of the EGU Division on Soil System Sciences (EGU
179 SSS).

180 In addition, the following Italian researchers have received scientific awards in fields
181 related to the Associations that constitute the Union:

- 182 • Francesca MIOZZI, Mineral and Rock Physics Graduate Research Award, American
183 Geophysical Union.
- 184 • Augusto NERI, Gilbert F. White Distinguished Award and Lecture, American
185 Geophysical Union.
- 186 • Raffaele PERSICO, Christiaan Huygens Medal, European Geosciences Union.
- 187 • Marco Maria SCUDERI, Mineral and Rock Physics Early Career Award, American
188 Geophysical Union.

189 **7. Summary of the Commission's 2020 activities**

190 The Commission for the participation of CNR to the International Union of Geodesy and
191 Geophysics operates as the "*Italian National Committee*" of the IUGG, and according to
192 the statute of the body, is composed of the Italian Representative in the IUGG and the
193 Italian Representatives in the eight IUGG Associations (see above). The Commission has,
194 among others, the task of providing (i) guidelines and proposals for a greater Italian
195 participation to the activities of the IUGG, and (ii) the necessary support to the CNR on
196 issues concerning international initiatives, and activities promoted by the IUGG.

197 During 2020, the Commission met once, on 16 June, by video conference, to discuss (i)
198 the activities of the individual Associations; (ii) proposals for activities of the national
199 commission in 2020; and (iii) proposals for meetings, national and international.
200 Regarding the first point, problems related to the Covid-19 pandemic emerged at the
201 meeting, with the cancellation or postponement of national and international meetings
202 and training events. Regarding the second point, it was proposed to repeat the experience
203 of the multi-disciplinary workshop on the “State of the art and perspectives in the
204 predictability of natural events” held at the CNR headquarters, in Rome, on 26 and 27
205 November 2019, under the auspices of the IUGG and the eight International Associations.
206 The persistence of the pandemic and the related difficulties of communication and
207 interaction prevented the organisation of the event. Regarding the third point, the
208 difficulty of organising events in presence and, at the date of the meeting, also remotely
209 emerged.

210 Other activities of the Italian National Commission in 2020 concerned:

- 211 • Update the information on IUGG Commission members for the IUGG Yearbook
212 2021 (<http://www.iugg.org/publications/yearbooks/yearbook2021.pdf>); and
- 213 • Disseminate news of interest to the national IUGG community published in the
214 IUGG Quarterly Newsletters (<http://www.iugg.org/publications/ejournals/>).

215 8. Conclusions

216 The second year of activity of the National IUGG Commission, like that of many of the
217 Associations that compose the Union, was strongly penalised by the Covid-19 pandemic
218 emergency. The annual reports of the individual Associations reveal significant effects of
219 the pandemic, not only limited to the impossibility of holding scientific and technical
220 meetings in person, and to the difficulties involved in conducting meetings and training
221 activities remotely, but also due to the difficulty - for some Associations more than others
222 - in executing and planning activities that are fundamental for research, and in particular
223 measurements and survey campaigns. Since the end of the year, albeit with great
224 uncertainties and thanks to the improved epidemiological outlook, the Associations and
225 the Union have begun to plan their future activities.

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230 Rome, 15 May 2021

Fausto Gazzetti
