Supplementary material for: Qi Liang, Sha Peng, Beibei Niu, Chunxia Zhou & Zhen Wang 2018. Mapping glacier-related research in polar regions: a bibliometric analysis of research output from 1987 to 2016. *Polar Research 37.* Contact: Chunxia Zhou, Chinese Antarctic Centre of Surveying and Mapping, Wuhan University, 129 Luoyu Road, Wuhan, 430079, China. Email: zhoucx@whu.edu.cn



**Supplementary Fig. S1**. Power model of the percentage of the total author keywords and the number of times the keywords are used. The inset shows the distribution using a double-logarithmic model.

**Supplementary Table S1**. The 21 (a) most productive and (b) most cited authors.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| (a) Authors (institution, country) | Ra(TPb) | R(TC/TPc) | R(h-index) | (b) Authors (institution, country) | R(TP) | R(TC/TP) | R(h-index) |
| Dowdeswell J.A. (Univ. of Cambridge, UK) | 1(158) | 14(44.8) | 2(49) | Jouzel J. (CNRS, France) | 2(152) | 8(154) | 1(61) |
| Jouzel J. (CNRS, France) | 2(152) | 1(154) | 1(61) | Raynaud D. (CNRS, France) | 10(66) | 5(199) | 4(41) |
| Alley R.B. (Pennsylvania State Univ., USA) | 3(126) | 8(73.7) | 2(49) | Barnola J.M. (CNRS, France) | 13(57) | 3(211) | 6(38) |
| Siegert M.J. (Univ. of Bristol, UK) | 4(120) | 15(38.0) | 10(34) | Chappellaz J. (CNRS, France) | 8(79) | 10(149) | 3(42) |
| Rignot E. (Univ. of California Irvine, USA) | 5(109) | 7(74.4) | 4(42) | Stocker T.F. (Univ. of Bern, Switzerland) | 9(68) | 11(148) | 4(41) |
| Masson-Delmotte V. (CNRS, France) | 6(104) | 6(80.7) | 6(39) | Petit J.R. (CNRS, France) | 6(103) | 16(85.2) | 7(37) |
| Petit J.R. (CNRS, France) | 7(103) | 5(85.2) | 8(37) | Masson-Delmotte V. (CNRS, France) | 5(104) | 17(80.7) | 5(39) |
| Joughin I. (Univ. of Washington, USA) | 8(92) | 9(71.2) | 3(44) | Alley R.B. (Pennsylvania State Univ., USA) | 3(126) | 20(73.7) | 2(49) |
| Tranter, M (Univ. of Bristol, UK) | 9(86) | 17(30.7) | 11(32) | Fischer H. (Univ. of Bern, Switzerland) | 7(82) | 14(102) | 9(35) |
| Van den Broeke M.R. (Utrecht Univ., Netherlands) | 10(84) | 10(61.7) | 13(29) | Schwander J. (University of Bern, Switzerland) | 15(52) | 7(155) | 8(36) |
| Andrews J.T. (Univer. of Colorado Boulder, USA) | 10(84) | 12(52.7) | 7(38) | Rignot E. (Univ. of California Irvine, USA) | 4(109) | 19(74.4) | 3(42) |
| Kuhn G. (Alfred Wegener Institute, Germany) | 11(82) | 20(26.2) | 13(29) | Dowdeswell J.A. (Univ. of Cambridge, UK) | 1(158) | 21(44.8) | 2(49) |
| Fischer H. (Univ. of Bern, Switzerland) | 11(82) | 4(102) | 9(35) | Johnsen S.J. (Univ. of Copenhagen, Denmark) | 12(62) | 2(215) | 3(42) |
| Chappellaz J. (CNRS, France) | 12(79) | 2(149) | 4(42) | Steffensen J.P. (Univ. of Copenhagen, Denmark) | 11(65) | 4(207) | 7(37) |
| Anandakrishnan S. (Pennsylvania State Univ., USA) | 13(74) | 18(29.8) | 14(27) | Ritz C. (CNRS, France) | 18(39) | 9(150) | 13(26) |
| Landais A. (CNRS, France) | 14(70) | 11(57.3) | 12(30) | Pagani M. (Yale Univ., USA) | 20(11) | 1(483) | 16(9) |
| Stocker T.F. (Univ. of Bern, Switzerland) | 15(68) | 3(148) | 5(41) | Clark P.U. (Oregon State Univ.) | 16(49) | 13(112) | 12(29) |
| Hillenbrand C.D. (British Antarctic Survey, UK) | 15(68) | 19(29.7) | 15(26) | Blunier T. (Univ. of Bern, Switzerland) | 14(53) | 12(118) | 11(31) |
| Bentley M.J. (Univ. of Durham, UK) | 15(68) | 16(37.5) | 15(26) | Vaughan D.G. (British Antarctic Survey, UK) | 12(62) | 18(79.2) | 10(32) |
| Bennike O. (Geological Survey of Denmark and Greenland, Denmark) | 16(67) | 21(26.0) | 14(27) | Thomas E. (Yale Univ., USA) | 19(28) | 6(184) | 17(14) |
| Bamber J.L. (Univ. of Bristol, UK) | 16(67) | 13(48.5) | 15(26) | Lipenkov V.Y. (Arctic and Antarctic Research Institute, Russia) | 17(40) | 15(98.8) | 14(17) |

a Rank. b Total publications. c Average citations per paper.

**Supplementary Table S2**. The 30 most frequently used keywords.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Keyword | TPa |  | 1987-1996 |  | 1997-2006 |  | 2007-2016 |
| Cntb | Rc |  | Cnt | %d | R |  | Cnt | % | R |  | Cnt | % | R |
| Antarctica | 1844 | 1 |  | 89 | 1.010 | 3 |  | 635 | 1.180 | 1 |  | 1120 | 0.944 | 1 |
| Greenland | 1481 | 2 |  | 59 | 0.672 | 9 |  | 486 | 0.905 | 3 |  | 936 | 0.789 | 3 |
| Climate change | 1457 | 3 |  | 32 | 0.364 | 23 |  | 370 | 0.689 | 6 |  | 1055 | 0.889 | 2 |
| Climate | 1362 | 4 |  | 91 | 1.040 | 2 |  | 480 | 0.894 | 4 |  | 791 | 0.667 | 7 |
| Ice sheet | 1268 | 5 |  | 48 | 0.546 | 13 |  | 360 | 0.671 | 7 |  | 860 | 0.725 | 5 |
| Last Glacial Maximum | 1241 | 6 |  | 9 | 0.102 | 45 |  | 328 | 0.611 | 9 |  | 904 | 0.762 | 4 |
| Record | 1213 | 7 |  | 139 | 1.580 | 1 |  | 548 | 1.030 | 2 |  | 526 | 0.443 | 15 |
| Glacier | 1179 | 8 |  | 59 | 0.672 | 9 |  | 297 | 0.553 | 12 |  | 823 | 0.694 | 6 |
| North Atlantic | 1037 | 9 |  | 62 | 0.706 | 8 |  | 440 | 0.820 | 5 |  | 535 | 0.451 | 14 |
| Model | 949 | 10 |  | 54 | 0.615 | 11 |  | 261 | 0.486 | 15 |  | 634 | 0.534 | 9 |
| Sheet | 893 | 11 |  | 39 | 0.444 | 18 |  | 265 | 0.494 | 14 |  | 589 | 0.496 | 10 |
| West Antarctica | 839 | 12 |  | 10 | 0.114 | 44 |  | 166 | 0.309 | 30 |  | 663 | 0.559 | 8 |
| Holocene | 809 | 13 |  | 31 | 0.353 | 24 |  | 311 | 0.579 | 11 |  | 467 | 0.394 | 16 |
| Ocean | 798 | 14 |  | 81 | 0.922 | 5 |  | 324 | 0.604 | 10 |  | 393 | 0.331 | 23 |
| Sediments | 773 | 15 |  | 86 | 0.979 | 4 |  | 337 | 0.628 | 8 |  | 350 | 0.295 | 29 |
| Variability | 732 | 16 |  | 15 | 0.171 | 39 |  | 176 | 0.328 | 27 |  | 541 | 0.456 | 13 |
| Mass balance | 728 | 17 |  | 14 | 0.159 | 40 |  | 163 | 0.304 | 31 |  | 551 | 0.464 | 11 |
| East Antarctica | 713 | 18 |  | 6 | 0.068 | 48 |  | 159 | 0.296 | 32 |  | 548 | 0.462 | 12 |
| Ice core | 712 | 19 |  | 37 | 0.421 | 20 |  | 256 | 0.477 | 16 |  | 419 | 0.353 | 21 |
| History | 710 | 20 |  | 78 | 0.888 | 6 |  | 248 | 0.462 | 17 |  | 384 | 0.324 | 25 |
| Temperature | 707 | 21 |  | 30 | 0.341 | 25 |  | 246 | 0.458 | 18 |  | 431 | 0.363 | 17 |
| Sea level | 669 | 22 |  | 45 | 0.512 | 15 |  | 195 | 0.363 | 23 |  | 429 | 0.362 | 18 |
| Ice | 656 | 23 |  | 59 | 0.672 | 9 |  | 231 | 0.430 | 20 |  | 366 | 0.309 | 27 |
| Evolution | 654 | 24 |  | 43 | 0.489 | 17 |  | 211 | 0.393 | 22 |  | 400 | 0.337 | 22 |
| Flow | 627 | 25 |  | 25 | 0.285 | 29 |  | 177 | 0.330 | 26 |  | 425 | 0.358 | 19 |
| Southern Ocean | 614 | 26 |  | 22 | 0.250 | 32 |  | 173 | 0.322 | 28 |  | 419 | 0.353 | 21 |
| Circulation | 608 | 27 |  | 63 | 0.717 | 7 |  | 242 | 0.451 | 19 |  | 303 | 0.255 | 35 |
| Greenland Ice Sheet | 552 | 28 |  | 12 | 0.137 | 42 |  | 116 | 0.216 | 46 |  | 424 | 0.357 | 20 |
| Late Pleistocene | 532 | 29 |  | 17 | 0.194 | 37 |  | 150 | 0.280 | 35 |  | 365 | 0.308 | 28 |
| Deglaciation | 525 | 30 |  | 35 | 0.398 | 21 |  | 193 | 0.360 | 24 |  | 297 | 0.250 | 36 |

a Total publications. b Count of occurrences. c Rank. d Share of the keywords.