附表1石英二长岩LA-ICP-MS锆石U-Pb定年结果

Table 1 LA-ICP-MS U-Pb zircon isotopic results of the quartz monzonite

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 分析点 | 元素含量（10-6） | Th/U | 同位素比值 |  | 年龄（Ma） |
| Pb | Th | U | 207Pb/206Pb | ±1σ | 207Pb/235U | ±1σ | 206Pb/238U | ±1σ |  | 207Pb/235U | ±1σ | 206Pb/238U | ±1σ |
| 1 | 38.2  | 648  | 825  | 0.79  | 0.050 3 | 0.001 3  | 0.252 7  | 0.006 0  | 0.036 3  | 0.000 3  |  | 229  | 4.8  | 230  | 1.8  |
| 2 | 31.4  | 533  | 678  | 0.79  | 0.051 3 | 0.001 2  | 0.259 2  | 0.005 7  | 0.036 6  | 0.000 3  |  | 234  | 4.6  | 232  | 2.1  |
| 3 | 52.3  | 924  | 1215  | 0.76  | 0.050 5 | 0.001 1  | 0.256 4  | 0.006 6  | 0.036 7  | 0.000 6  |  | 232  | 5.3  | 232  | 3.8  |
| 4 | 49.8  | 766  | 1098  | 0.70  | 0.051 3  | 0.001 0  | 0.258 8  | 0.005 3  | 0.036 5  | 0.000 3  |  | 234  | 4.3  | 231  | 2.2  |
| 5 | 15.81  | 179  | 364  | 0.49  | 0.053 0  | 0.001 6  | 0.267 0  | 0.007 7  | 0.036 7  | 0.000 3  |  | 240  | 6.1  | 232  | 2.1  |
| 6 | 32.7  | 547  | 729  | 0.75  | 0.051 7  | 0.001 1  | 0.258 1  | 0.005 7  | 0.036 4  | 0.000 4  |  | 233  | 4.6  | 230  | 2.8  |
| 7 | 31.8  | 510  | 693  | 0.74  | 0.049 5  | 0.001 2  | 0.249 8  | 0.006 3  | 0.036 5  | 0.000 3  |  | 226  | 5.1  | 231  | 1.6  |
| 8 | 21.45  | 340  | 473  | 0.72  | 0.050 8  | 0.001 4  | 0.252 4  | 0.006 9  | 0.036 1  | 0.000 3  |  | 228  | 5.6  | 228  | 1.7  |
| 9 | 27.69  | 374  | 642  | 0.58  | 0.054 3  | 0.001 5  | 0.272 8  | 0.007 8  | 0.036 3  | 0.000 4  |  | 245  | 6.3  | 230  | 2.5  |
| 10 | 23.14  | 362  | 515  | 0.70  | 0.052 9  | 0.001 6  | 0.265 7  | 0.007 8  | 0.036 5  | 0.000 3  |  | 239  | 6.3  | 231  | 2.0  |
| 11 | 43.1  | 710  | 942  | 0.75  | 0.052 8  | 0.001 1  | 0.264 6  | 0.005 6  | 0.036 4  | 0.000 3  |  | 238  | 4.5  | 230  | 2.1  |
| 12 | 25.76  | 359  | 576  | 0.62  | 0.052 2  | 0.001 4  | 0.261 0  | 0.006 4  | 0.036 3  | 0.000 3  |  | 235  | 5.2  | 230  | 1.6  |
| 13 | 36.4  | 558  | 809  | 0.69  | 0.054 2  | 0.001 3  | 0.274 2  | 0.006 8  | 0.036 6  | 0.000 4  |  | 246  | 5.4  | 232  | 2.3  |
| 14 | 35.1  | 509  | 793  | 0.64  | 0.051 4  | 0.001 1  | 0.257 4  | 0.005 3  | 0.036 3  | 0.000 3  |  | 233  | 4.3  | 230  | 1.7  |
| 15 | 36.0  | 678  | 749  | 0.91  | 0.052 4  | 0.001 1  | 0.264 1  | 0.005 5  | 0.036 4  | 0.000 3  |  | 238  | 4.4  | 231  | 1.6  |
| 16 | 28.74  | 409  | 644  | 0.64  | 0.055 2  | 0.001 4  | 0.277 3  | 0.006 9  | 0.036 4  | 0.000 3  |  | 248  | 5.5  | 230  | 1.7  |
| 17 | 41.7  | 837  | 911  | 0.92  | 0.053 4  | 0.001 1  | 0.268 0  | 0.006 4  | 0.036 3  | 0.000 4  |  | 241  | 5.1  | 230  | 2.8  |
| 18 | 40.7  | 767  | 932  | 0.82  | 0.051 4  | 0.001 2  | 0.259 1  | 0.007 2  | 0.036 5  | 0.000 5  |  | 234  | 5.8  | 231  | 3.3  |
| 19 | 25.00  | 406  | 546  | 0.74  | 0.050 0  | 0.001 3  | 0.251 1  | 0.006 5  | 0.036 4  | 0.000 3  |  | 227  | 5.3  | 231  | 2.0  |
| 20 | 28.5  | 497  | 625  | 0.79  | 0.049 2  | 0.001 2  | 0.248 0  | 0.005 8  | 0.036 6  | 0.000 3  |  | 225  | 4.7  | 232  | 2.1  |
| 21 | 28.9  | 503  | 632  | 0.80  | 0.053 4  | 0.001 5  | 0.268 6  | 0.007 1  | 0.036 7  | 0.000 4  |  | 242  | 5.7  | 232  | 2.4  |
| 22 | 24.39  | 395  | 539  | 0.73  | 0.049 0  | 0.001 2  | 0.247 0  | 0.006 2  | 0.036 5  | 0.000 3  |  | 224  | 5.0  | 231  | 1.7  |
| 23 | 43.9  | 737  | 999  | 0.74  | 0.047 4  | 0.001 1  | 0.237 7  | 0.005 7  | 0.036 3  | 0.000 5  |  | 217  | 4.7  | 230  | 3.0  |
| 24 | 48.2  | 533  | 1284  | 0.41  | 0.048 3  | 0.001 1  | 0.244 3  | 0.006 7  | 0.036 4  | 0.000 6  |  | 222  | 5.5  | 231  | 3.7  |

 附表2 贡觉石英二长岩(D0004)锆石Hf同位素组成

Table 2 Zircon Hf isotopic compositions of the quartz monzonite in Gonjo(D0004)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 测试号 | 年龄(Ma) | 176Yb/177Hf | 176Lu/177Hf | 176Hf/177Hf | 2*σ* | (176Hf/177Hf)i | *ε*Hf(0) | *ε*Hf(*t*) | *T*DM (Ma) | *T*DMC(Ma) | *f*Lu/Hf | (176Hf/177Hf)DM,t |
| D0004-02 | 232 | 0.046 529 | 0.001 286 | 0.282 479 | 0.000 016 | 0.282 474 | -10.4 | -5.5 | 110 2 | 161 1 | -0.96 | 0.283 083 |
| D0004-03 | 232 | 0.039 918 | 0.001 148 | 0.282 474 | 0.000 016 | 0.282 469 | -10.5 | -5.6 | 110 6 | 162 2 | -0.97 | 0.283 083 |
| D0004-05 | 232 | 0.027 005 | 0.000 803 | 0.282 475 | 0.000 016 | 0.282 471 | -10.5 | -5.5 | 109 4 | 161 7 | -0.98 | 0.283 083 |
| D0004-06 | 230 | 0.029 022 | 0.000 862 | 0.282 459 | 0.000 016 | 0.282 455 | -11.1 | -6.2 | 111 8 | 165 4 | -0.97 | 0.283 085 |
| D0004-07 | 231 | 0.026 284 | 0.000 799 | 0.282 432 | 0.000 016 | 0.282 428 | -12.0 | -7.1 | 115 4 | 171 3 | -0.98 | 0.28 3084 |
| D0004-08 | 228 | 0.026 757 | 0.000 889 | 0.282 399 | 0.000 017 | 0.282 396 | -13.2 | -8.3 | 120 2 | 178 8 | -0.97 | 0.283 086 |
| D0004-09 | 230 | 0.025 546 | 0.000 755 | 0.282 424 | 0.000 015 | 0.282 421 | -12.3 | -7.4 | 116 4 | 173 1 | -0.98 | 0.283 085 |
| D0004-12 | 230 | 0.022 235 | 0.000 671 | 0.282 432 | 0.000 015 | 0.282 429 | -12.0 | -7.1 | 115 0 | 171 2 | -0.98 | 0.283 085 |
| D0004-15 | 231 | 0.033 210 | 0.000 963 | 0.282 448 | 0.000 016 | 0.282 443 | -11.5 | -6.6 | 113 7 | 168 0 | -0.97 | 0.283 084 |
| D0004-18 | 231 | 0.046 221 | 0.001 335 | 0.282 403 | 0.000 015 | 0.282 397 | -13.0 | -8.2 | 121 1 | 178 2 | -0.96 | 0.283 084 |
| D0004-19 | 231 | 0.026 216 | 0.000 764 | 0.282 427 | 0.000 017 | 0.282 424 | -12.2 | -7.2 | 115 9 | 172 2 | -0.98 | 0.283 084 |
| D0004-20 | 232 | 0.032 040 | 0.000 912 | 0.282 429 | 0.000 016 | 0.282 425 | -12.1 | -7.2 | 116 1 | 172 0 | -0.97 | 0.283 083 |
| D0004-21 | 232 | 0.037 742 | 0.001 079 | 0.282 453 | 0.000 015 | 0.282 448 | -11.3 | -6.4 | 113 3 | 166 8 | -0.97 | 0.283 083 |
| D0004-22 | 231 | 0.031 789 | 0.000 916 | 0.282 431 | 0.000 015 | 0.282 427 | -12.1 | -7.1 | 116 0 | 171 7 | -0.97 | 0.283 084 |
| D0004-23 | 230 | 0.043 318 | 0.001 229 | 0.282 444 | 0.000 017 | 0.282 439 | -11.6 | -6.7 | 115 0 | 169 1 | -0.96 | 0.283 085 |

附表3 石英二长岩主量、微量和稀土元素分析结果

Table 3 Major, trace and rare earth element analytical results for the quartz monzonite

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 样品号 | D0001-YQ1 | D0001-YQ2 | D0003-YQ1 | D0003-YQ2 | D0004-YQ1 | D0004-YQ2 |
| SiO2 | 63.9 | 65.34 | 63.03 | 62.98 | 64.57 | 63.14 |
| TiO2 | 0.56 | 0.54 | 0.55 | 0.6 | 0.51 | 0.46 |
| Al2O3 | 16.44 | 15.71 | 15.62 | 15.45 | 15.41 | 16.43 |
| TFe2O3 | 4.78 | 4.64 | 5.08 | 5.45 | 4.56 | 4.62 |
| MnO | 0.1 | 0.1 | 0.11 | 0.12 | 0.1 | 0.1 |
| MgO | 1.86 | 1.65 | 1.67 | 1.83 | 1.36 | 1.52 |
| CaO | 4.2 | 3.94 | 4.82 | 5.05 | 4.3 | 4.49 |
| Na2O | 3.38 | 3.31 | 3.27 | 3.35 | 3.15 | 3.71 |
| K2O | 3.07 | 3.05 | 4.9 | 4.41 | 5.27 | 4.68 |
| P2O5 | 0.19 | 0.15 | 0.24 | 0.26 | 0.2 | 0.19 |
| LOL | 1.41 | 1.46 | 0.53 | 0.34 | 0.38 | 0.49 |
| Total | 99.89 | 99.89 | 99.82 | 99.84 | 99.81 | 99.83 |
| A/NK | 1.85  | 1.79  | 1.46  | 1.50  | 1.41  | 1.47  |
| A/CNK | 0.99  | 0.99  | 0.80  | 0.79  | 0.82  | 0.85  |
| Mg# | 44 | 42 | 40 | 40 | 37 | 40 |
| La | 39.5 | 35.4 | 61.9 | 73.5 | 68.1 | 57.8 |
| Ce | 73 | 67.4 | 114 | 127 | 119 | 97.3 |
| Pr | 7.97 | 7.55 | 12.6 | 13.6 | 12.7 | 10.6 |
| Nd | 29 | 27.3 | 44.5 | 49.4 | 42.4 | 37.8 |
| Sm | 5.32 | 5.02 | 7.66 | 8.12 | 7.42 | 6.93 |
| Eu | 1.12 | 1.1 | 1.61 | 1.58 | 1.53 | 1.4 |
| Gd | 4.34 | 4.27 | 5.86 | 6.19 | 5.46 | 5.49 |
| Tb | 0.65 | 0.65 | 0.83 | 0.87 | 0.78 | 0.82 |
| Dy | 3.7 | 3.65 | 4.47 | 4.65 | 4.2 | 4.46 |
| Ho | 0.74 | 0.73 | 0.86 | 0.91 | 0.82 | 0.87 |
| Er | 2.11 | 2.09 | 2.38 | 2.55 | 2.35 | 2.51 |
| Tm | 0.32 | 0.31 | 0.35 | 0.37 | 0.35 | 0.37 |
| Yb | 2.15 | 2.12 | 2.32 | 2.53 | 2.36 | 2.42 |
| Lu | 0.33 | 0.32 | 0.35 | 0.38 | 0.36 | 0.37 |
| Y | 18.4 | 18.7 | 20.9 | 23.5 | 20.5 | 22.3 |
| ΣLREE | 155.91 | 143.77 | 242.27 | 273.2 | 251.15 | 211.83 |
| ΣHREE | 14.34 | 14.14 | 17.42 | 18.45 | 16.68 | 17.31 |
| ΣREE | 170.25 | 157.91 | 259.69 | 291.65 | 267.83 | 229.14 |
| Eu/Eu\* | 0.69 | 0.71 | 0.71 | 0.65 | 0.70 | 0.67 |
| (La/Yb)N | 13.18  | 11.98  | 19.14  | 20.84  | 20.70  | 17.13  |
| (Ho/Lu)N | 1.01  | 1.02  | 1.10  | 1.07  | 1.02  | 1.06  |
| Rb | 106 | 104 | 180 | 169 | 187 | 166 |
| Ba | 604 | 708 | 1450 | 1145 | 1480 | 1163 |
| Th | 18.8 | 17.6 | 32.9 | 36.6 | 39.5 | 41.5 |
| U | 2.61 | 2.45 | 7.74 | 8.58 | 6.68 | 7.21 |
| Nb | 21 | 21.8 | 28 | 30.8 | 29 | 26.4 |
| Ta | 2.58 | 2.25 | 2.46 | 2.64 | 2.61 | 2.16 |
| Pb | 14.6 | 16.1 | 20.5 | 19.6 | 20.7 | 19.1 |
| Sr | 405 | 427 | 621 | 599 | 607 | 585 |
| Zr | 139 | 203 | 237 | 275 | 250 | 253 |
| Hf | 3.83 | 5.05 | 5.91 | 6.64 | 6.17 | 6.21 |
| Cs | 2.54 | 3.02 | 1.43 | 1.43 | 1.61 | 1.44 |
| V | 84.5 | 65.5 | 91 | 97.5 | 77.4 | 73.4 |
| Cr | 8.22 | 9.51 | 11.7 | 12.1 | 9.15 | 9.84 |
| Co | 9.37 | 8.48 | 10.3 | 11.8 | 9.52 | 11.3 |
| Ni | 5.65 | 5.8 | 7.7 | 8.29 | 6.85 | 8.14 |
| Cu | 11.4 | 4.58 | 12.8 | 23.4 | 20 | 33.2 |
| Ga | 20.9 | 21.6 | 20.7 | 21 | 19.9 | 21.4 |
| Rb/Sr | 8.7 | 8.09 | 9.63 | 9.37 | 10.24 | 9.43 |
| Rb/Ba | 1.93 | 1.62 | 1.37 | 1.62 | 1.39 | 1.57 |

A/NK=molar Al2O3/(Na2O+K2O)；A/CNK= molar Al2O3/(CaO+Na2O+K2O).