

C. FIELDWORK AND LABORATORY ACTIVITIES

2.3. IDENTIFYING AND CHARACTERIZING THE MAIN TECTONIC ALIGNMENTS ASSOCIATED WITH MAGMATIC ACTIVITY, BASED ON GEOLOGICAL AND GEOPHYSICAL DATA (II)

2.3.1. INTEGRATION OF THE K/AR, PETROLOGIC AND GEOPHYSICAL DATA OF THE VOLCANIC AND SUBVOLCANIC STRUCTURES IN THE STUDY AREA

During 2014 field studies, along the complex geological observations it was finished the sampling of the main subvolcanic bodies from the Rodna-Bargau area. This sampling followed that of 2013 year. This area is situated in the northern part of the INSTEC areal.

We are showing below a table with the most important sample collection during 2013-2014 field work. The table is giving: sample code, rock type with preliminary petrographic characteristics, relative age of the rocks in Ma, according to the Pécskay et al. (2009), GPS position of the samples, along with the density calculated in the our geophysical lab. The samples have been recently chemically analysed in a cooperation with Neaples University, with whom we established a bilateral agreement. In the next stage the geochemical and petrographic data will be processed.

| Cod roca | Rock type petrografie | Age (Ma) K/Ar data | LAT grades | LATm minutes | LONG grades | LONGm minutes | ALT (m) | dens (g/cm³) | Cod GPS |
|-----------------|------------------------------|---------------------------|-------------------|---------------------|--------------------|----------------------|----------------|--------------------------------|----------------|
| FLN-1 | riolite | 8 | 47 | 26.854736 | 24 | 31.157009 | 885 | 2.50 | 423 |
| FLN-1A | riolite | 8 | 47 | 26.854736 | 24 | 31.157009 | 885 | 2.63 | 423 |
| FLN-2 | riolite | 8 | 47 | 21.109925 | 24 | 31.964809 | 847 | 2.34 | 424 |
| FLN-3B | dacite | 10.8 | 47 | 22.783994 | 24 | 41.475729 | 475 | 2.66 | 425 |
| FLN-4 | bazaltic andesite | 8.5 | 47 | 24.647075 | 24 | 41.331746 | 597 | 2.7 | 426 |
| FLN-5 | andesite | 10.3 | 47 | 24.681033 | 24 | 41.608101 | 619 | 2.62 | 427 |
| FLN-6 | andesite | 9 | 47 | 24.735712 | 24 | 42.917781 | 899 | 2.57 | 428 |
| FLN-7 | andesite | 10 | 47 | 24.861494 | 24 | 42.541181 | 863 | 2.61 | 429 |
| FLN-8 | andesite | 10.1 | 47 | 24.691800 | 24 | 41.734800 | 652 | 2.58 | - |
| FLN-9 | andesite | 9 | 47 | 24.560177 | 24 | 40.667515 | 525 | 2.62 | 430 |
| FLN-10 | dacite | 10.8 | 47 | 24.907736 | 24 | 40.346060 | 533 | 2.44 | 431 |

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|---------|----------------------|------|----|-----------|----|-----------|-----|------|-----|
| FLN-11 | dacite | 10.8 | 47 | 24.240650 | 24 | 38.792470 | 601 | 2.52 | 432 |
| FLN-12 | dacite | 10.8 | 47 | 24.384356 | 24 | 38.780118 | 626 | 2.51 | 433 |
| FLN-12B | hornfels | 10.8 | 47 | 24.384356 | 24 | 38.780118 | 626 | 2.55 | 433 |
| FLN-13 | dacite | 10.7 | 47 | 24.187238 | 24 | 37.946212 | 651 | 2.49 | 434 |
| FLN-14 | dacite | 8 | 47 | 25.051970 | 24 | 47.664307 | 522 | 2.64 | 435 |
| FLN-15 | andesite | 8.7 | 47 | 20.499388 | 24 | 43.264256 | 473 | 2.57 | 436 |
| FLN-16 | dacite | 9 | 47 | 21.426943 | 24 | 44.134514 | 497 | 2.55 | 437 |
| FLN-18 | dacite | 9.5 | 47 | 22.488710 | 24 | 45.272822 | 505 | 2.59 | 438 |
| FLN-19 | microdiorite | 9.5 | 47 | 22.725151 | 24 | 45.375826 | 516 | 2.64 | 439 |
| FLN-20 | andesite | 9.4 | 47 | 22.905731 | 24 | 46.316756 | 533 | 2.57 | 440 |
| FLN-21 | dacite | 10 | 47 | 22.873369 | 24 | 46.701169 | 538 | 2.52 | 441 |
| FLN-22 | basaltic andesite | 8.8 | 47 | 22.663186 | 24 | 47.735121 | 554 | 2.61 | 442 |
| FLN-23 | microdiorite | 9.8 | 47 | 22.364833 | 24 | 49.384894 | 648 | 2.51 | 443 |
| FLN-24 | microdiorite | 9.7 | 47 | 22.570468 | 24 | 49.357396 | 589 | 2.75 | 444 |
| FLN-25 | microdiorite | 9.7 | 47 | 22.622906 | 24 | 50.427016 | 637 | 2.65 | 445 |
| FLN-26 | andesite | 9.5 | 47 | 21.829229 | 24 | 53.328724 | 626 | 2.72 | 446 |
| FLN-27 | andesite | 9.6 | 47 | 24.752653 | 24 | 55.545175 | 746 | 2.55 | 447 |
| FLN-28 | andesite | 8 | 47 | 27.686015 | 24 | 49.219800 | 600 | 2.53 | 448 |
| FLN-29 | andesite | 8 | 47 | 28.598633 | 24 | 49.790590 | 665 | 2.55 | 449 |
| FLN-30 | andesite | 8 | 47 | 28.342981 | 24 | 49.373428 | 678 | 2.65 | 450 |
| FLN-32 | andesite | 9.4 | 47 | 26.081293 | 24 | 48.555167 | 553 | 2.69 | 451 |
| FLN-33 | microdiorite | 9.1 | 47 | 26.002652 | 24 | 53.058583 | 652 | 2.71 | 453 |
| FLN-34 | andesite | 8 | 47 | 25.446000 | 24 | 52.765800 | 660 | 2.54 | - |
| FLN-34A | andesite | 8 | 47 | 25.446000 | 24 | 52.765800 | 660 | 2.72 | - |
| FLN-35 | andesite | 8 | 47 | 26.974247 | 24 | 41.757649 | 760 | 2.62 | 454 |
| FLN-36 | andesite | 8 | 47 | 26.772215 | 24 | 41.379299 | 715 | 2.67 | 455 |
| FLN-37 | andesite | 9.3 | 47 | 20.509370 | 24 | 54.000850 | 708 | 2.73 | 456 |
| FLN-37A | andesite | 9.4 | 47 | 20.509370 | 24 | 54.000850 | 708 | 2.66 | 456 |
| FLN-38 | basaltic andesite | 8.5 | 47 | 20.425109 | 24 | 54.261560 | 735 | 2.58 | 457 |

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|--------|-----------|------|----|-----------|----|-----------|------|------|-----|
| FLN-39 | sandstone | 30 | 47 | 24.836099 | 24 | 54.854929 | 705 | 2.58 | 458 |
| FLN-40 | andesite | 9.7 | 47 | 16.028782 | 24 | 41.943322 | 729 | 2.7 | 459 |
| FLN-41 | andesite | 9.5 | 47 | 15.988619 | 24 | 42.010700 | 758 | 2.67 | 460 |
| FLN-42 | andesite | 9.5 | 47 | 15.754346 | 24 | 41.897368 | 889 | 2.7 | 461 |
| FLN-43 | andesite | 9.8 | 47 | 17.068234 | 24 | 42.832171 | 960 | 2.68 | 462 |
| FLN-44 | andesite | 9.5 | 47 | 17.103544 | 24 | 42.773020 | 946 | 2.67 | 463 |
| FLN-45 | andesite | 9.5 | 47 | 16.088525 | 24 | 42.103395 | 808 | 2.68 | 464 |
| FLN-46 | andesite | 9.5 | 47 | 16.132175 | 24 | 42.327583 | 811 | 2.62 | 465 |
| FLN-47 | andesite | 10.4 | 47 | 12.787576 | 24 | 53.002889 | 704 | 2.64 | 466 |
| FLN-48 | andesite | 10.5 | 47 | 14.130143 | 25 | 0.322025 | 1099 | 2.64 | 467 |
| FLN-49 | andesite | 10.1 | 47 | 15.855155 | 25 | 1.423620 | 1196 | 2.69 | 468 |
| FLN-50 | andesite | 9.4 | 47 | 14.124549 | 24 | 0.085386 | 1053 | 2.71 | 469 |
| FLN-51 | andesite | 10.5 | 47 | 13.656426 | 24 | 58.407016 | 936 | 2.69 | 470 |
| FLN-52 | andesite | 9.5 | 47 | 13.387787 | 24 | 55.486790 | 805 | 2.69 | 471 |
| FLN-53 | andesite | 10.2 | 47 | 13.224778 | 24 | 55.303761 | 827 | 2.63 | 472 |
| FLN-54 | andesite | 9.6 | 47 | 23.621097 | 25 | 9.203057 | 918 | 2.28 | 473 |
| FLN-55 | andesite | 9.6 | 47 | 23.105376 | 25 | 9.930778 | 901 | 2.63 | 474 |
| FLN-56 | andesite | 9.8 | 47 | 12.949636 | 25 | 5.012069 | 1041 | 2.69 | 475 |
| FLN-57 | andesite | 10 | 47 | 12.906991 | 25 | 5.285219 | 1070 | 2.7 | 476 |
| FLN-58 | diorite | 10.2 | 47 | 8.776041 | 25 | 6.408961 | 1230 | 2.75 | 477 |
| FLN-59 | andesite | 10 | 47 | 10.028739 | 25 | 5.187203 | 1179 | 2.66 | 478 |
| FLN-60 | andesite | 9.9 | 47 | 10.149902 | 25 | 5.377488 | 1159 | 2.67 | 479 |
| FLN-61 | andesite | 10 | 47 | 10.734853 | 25 | 5.357942 | 1120 | 2.64 | 480 |
| FLN-62 | andesite | 10 | 47 | 16.294126 | 25 | 5.598596 | 997 | 2.81 | 481 |
| FLN-63 | riolite | 8.8 | 47 | 17.342400 | 25 | 12.977400 | 990 | 2.53 | - |
| FLN-64 | andesite | 9.8 | 47 | 16.889756 | 25 | 12.099540 | 1024 | 2.6 | 482 |
| FLN-65 | andesite | 9.8 | 47 | 16.889756 | 25 | 12.099540 | 1024 | 2.61 | 482 |
| FLN-66 | andesite | 9.8 | 47 | 14.442955 | 25 | 10.445890 | 1117 | 2.68 | 483 |
| FLN-67 | andesite | 9.8 | 47 | 14.835147 | 25 | 10.809375 | 1153 | 2.68 | 484 |
| FLN-68 | andesite | 9.8 | 47 | 15.115724 | 25 | 10.435439 | 1102 | 2.56 | 485 |

| | | | | | | | | | |
|---------|-------------------|------|----|-----------|----|-----------|------|------|-----|
| FLN-69 | andesite | 9.8 | 47 | 18.812004 | 25 | 13.537029 | 934 | 2.64 | 486 |
| FLN-70 | basaltic andesite | 9.4 | 47 | 13.879497 | 24 | 57.534935 | 1006 | 2.69 | 487 |
| FLN-71 | andesite | 9.7 | 47 | 13.396467 | 24 | 53.289405 | 976 | 2.62 | 488 |
| FLN71A | andesite | 9.8 | 47 | 13.184725 | 24 | 53.508984 | 832 | 2.68 | 489 |
| FLN-72 | andesite | 10 | 47 | 12.513827 | 24 | 56.085061 | 1303 | 2.75 | 490 |
| FLN-73 | andesite | 10.1 | 47 | 12.337886 | 24 | 55.227765 | 1178 | 2.69 | 491 |
| FLN-74 | andesite | 9.8 | 47 | 12.793842 | 24 | 54.905232 | 1074 | 2.62 | 492 |
| FLN-75 | andesite | 9.8 | 47 | 12.96788 | 24 | 55.117184 | 1023 | 2.68 | 493 |
| FLN-76 | andesite | 9.8 | 47 | 16.212583 | 25 | 5.7704328 | 981 | 2.72 | 494 |
| FLN-77 | dacite | 9 | 47 | 14.715542 | 25 | 7.3471128 | 1182 | 2.31 | 495 |
| FLN-78 | andesite | 9.6 | 47 | 15.02288 | 24 | 58.393045 | 965 | 2.68 | 496 |
| FLN-79 | microdiorite | 9.9 | 47 | 15.865512 | 24 | 55.000719 | 805 | 2.71 | 497 |
| FLN-80 | andesite | 9.7 | 47 | 17.188662 | 24 | 54.153661 | 796 | 2.75 | 498 |
| FLN-81 | andesite | 9.7 | 47 | 18.470629 | 24 | 51.509569 | 664 | 2.59 | 499 |
| FLN-82 | andesite | 9.7 | 47 | 10.532619 | 24 | 56.112905 | 964 | 2.67 | 500 |
| FLN-83 | andesite | 9.7 | 47 | 10.595084 | 24 | 55.864519 | 935 | 2.59 | 501 |
| FLN-84 | microdiorite | 10.2 | 47 | 10.310923 | 25 | 3.0981882 | 1000 | 2.9 | 502 |
| FLN-85 | microdiorite | 10.2 | 47 | 10.49477 | 25 | 2.7518142 | 1174 | 2.77 | 503 |
| FLN-86 | microdiorite | 10.2 | 47 | 16.883649 | 24 | 47.469444 | 792 | 2.7 | 504 |
| FLN-87 | andesite | 9.6 | 47 | 17.482846 | 24 | 47.269279 | 707 | 2.71 | 505 |
| FLN-88 | andesite | 9.7 | 47 | 17.680527 | 24 | 45.151937 | 653 | 2.72 | 506 |
| FLN-89 | andesite | 9.7 | 47 | 18.79321 | 24 | 44.364825 | 507 | 2.73 | 507 |
| FLN-90 | andesite | 9.7 | 47 | 18.906177 | 24 | 44.060754 | 490 | 2.7 | 508 |
| FLN-91 | andesite | 9.8 | 47 | 24.061052 | 24 | 53.954309 | 1002 | 2.6 | - |
| FLN-92 | andesite | 9.9 | 47 | 24.563043 | 24 | 54.366323 | 826 | 2.7 | - |
| 474 | sandstone | 30 | 47 | 23.105376 | 25 | 9.9307776 | 901 | 2.61 | 474 |
| FLN-59C | andesite | 10 | 47 | 10.028739 | 25 | 5.1872034 | 1179 | 2.44 | 478 |
| FLN-64S | clay | 30 | 47 | 28.149594 | 25 | 20.1659 | 1024 | 2.48 | 482 |
| 71A1 | sandstone | 30 | 47 | 13.184725 | 24 | 53.508984 | 976 | 2.99 | 488 |

| | | | | | | | | | |
|---------|-----------|----|----|-----------|----|-----------|------|------|-----|
| 71S | sandstone | 30 | 47 | 13.184725 | 24 | 53.508984 | 976 | 2.57 | 488 |
| 87S1 | sandstone | 30 | 47 | 17.482846 | 24 | 47.269279 | 707 | 2.55 | 505 |
| 87S2 | sandstone | 30 | 47 | 17.482846 | 24 | 47.269279 | 707 | 2.4 | 505 |
| 87S3 | clay | 30 | 47 | 17.482846 | 24 | 47.269279 | 707 | 2.17 | 478 |
| FLN-59B | sandstone | 30 | 47 | 10.028739 | 25 | 5.1872034 | 1179 | 2.55 | 478 |
| 64S1 | sandstone | 30 | 47 | 28.149594 | 25 | 20.1659 | 1024 | 2.46 | 482 |

Below we show a geological map (1:200.000, IGR) with the GPS points of the collected samples (according to the GPS code in the table).

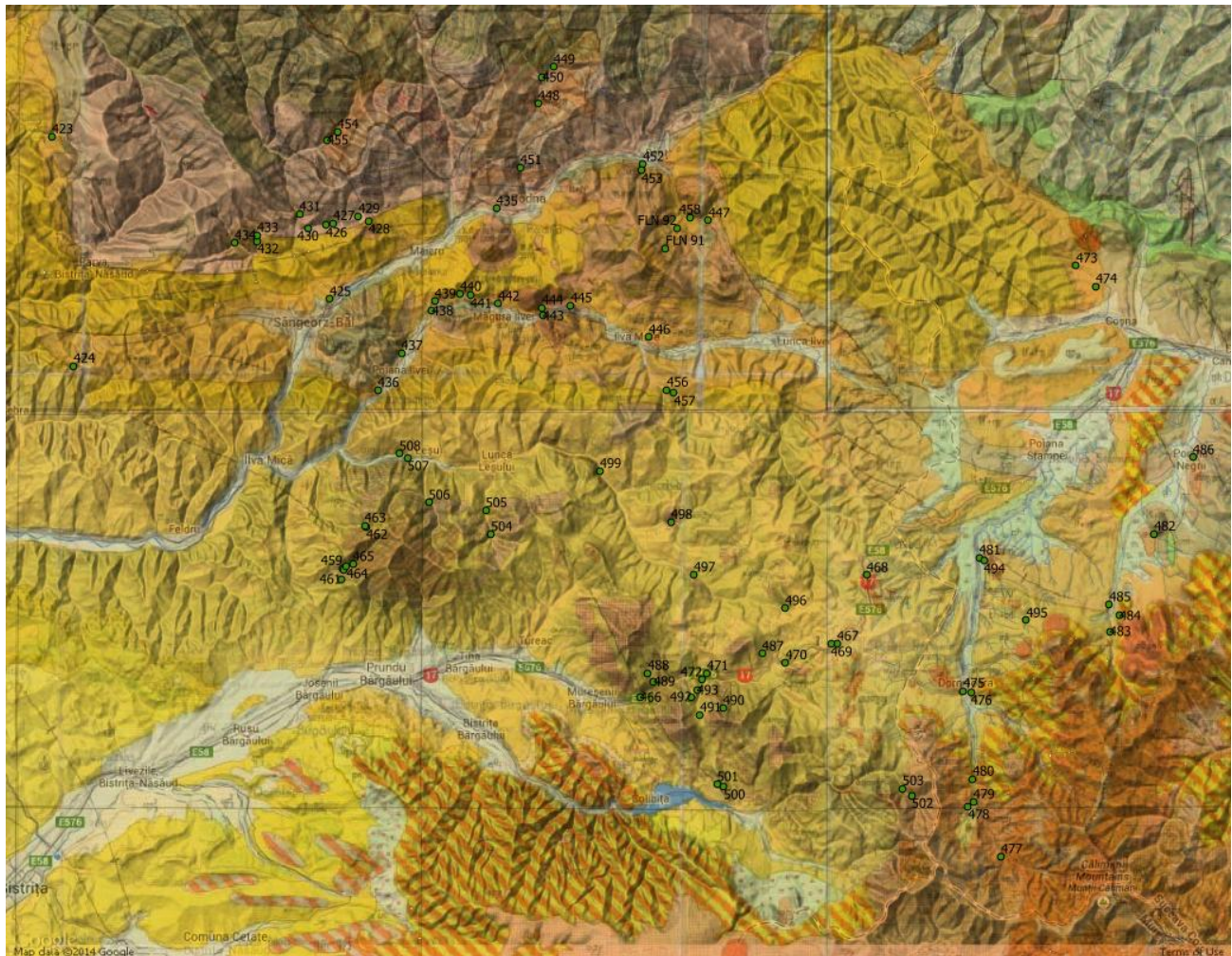


Fig. 25 - Location of the subvolcanic rock samples collected during 2013-2014 field work campaigns.