AR/39AR GEOCHRONOLOGY OF SERRA DO MAR DIKE SWARM IN THE RESENDE – ILHA GRANDE BAY SEGMENT, SOUTWEAST OF BRAZIL.

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Magmatic events related to the Gondwana breakup are present in almost every part in South America and are represented by continental flood basalts (CFB), dike swarms (DS), submarine chains (SC) and volcanism in passive margins (VPM). The estimated age for this process is around 130-140 Ma (continental area) and 130-120 Ma (oceanic basins).

The segment between Resende and Ilha Grande Bay, southeast of Brazil, contemplates part of Serra do Mar dike swarm related to the Gondwana break up. The swarm segment is formed by dikes and sills whose direction vary from NNW –NS in the north towards NE nearby the coast line following fractures, faults and the NE basement structural trend in the area.

The dikes/sills are composed mostly by basalts with variations to gabbros and porphyritic types and classified, based on chemical analysis, as a tholeiitic basalts with high contents of TiO_2 (average of 3.70% w.t) and high Ti/Zr and Ti/Y (average of 605 and 82.6 respectively). $(La/Yb)n$ rations suggest the presence of at least three different magmatic suites. Regional comparison suggests that the magmatism is similar to the Urubici and Pitanga types from Paraná Continental Flood Basalts.

Geochronology $^{40}Ar/^{39}Ar$ (whole rock and plagioclase) using step heating process indicated that those bodies present an age ranging from 126.3 ± 4.5 Ma to 155.4 ± 4.6 Ma, with concentrated values in the interval of 134 to 154 Ma.

Results indicate that the interval between ca. 126 to 135 Ma recorded at the target area is coeval with the Paraná CFB, Serra do Mar and Ponta Grossa DS, and VPM in Santos basin. On the other hand, the age interval of ca. 140 to 154 Ma is older, suggesting that extensional process and reactivation of basement structure were active in Southwest of Brazil since early Cretaceous to late Jurassic times.