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**Área Técnica do trabalho:** TEMA 19 - Magmatismo e Processos Petrogenéticos

**Título do Trabalho:** PRELIMINARY INSIGHTS OF THE MAGMATIC SYSTEM OF THE PARANÁ PROVINCE HT THOLEIITIC MAGMATISM BASED ON MINERAL TEXTURAL CHARACTERIZATION AND THERMOBAROMETRY DATA

**Forma de apresentação:** Pôster

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**Resumo do trabalho:**

The Paraná-Etendeka LIP is one of the biggest magmatic episodes recorded on the Earth, with a volume of at least  $1.7 \times 10^6$  km<sup>3</sup> that spreads throughout areas of Brazil, Argentina, Uruguay, and Paraguay in South America (Paraná Magmatic Province – PMP), and Namibia and Angola in Africa (Etendeka Province). It is linked with the Gondwana breakup and comprises Lower Cretaceous rocks. The PMP has been divided into two suites, low-TiO<sub>2</sub> (LT; < 2 wt.%) and high-TiO<sub>2</sub> (HT; > 2 wt.%), which are subdivided into magma types according to their geochemical characteristics and spatial distribution. They comprise predominantly basic rocks, with subordinates' acidic ones. This study presents preliminary data from petrography description, scanning electron microscopy (SEM - BSE) imaging, and electron microprobe analysis (EMPA) of plagioclases and pyroxenes crystals from the HT PMP basaltic rocks. Sixteen pyroxene crystals were analyzed with fifty-two spot analyses and one hundred and seven plagioclase crystals with five hundred and seventy spot analyses. The textural control of mineral zoning patterns and rock petrography guided the quantitative spot EPMA analyses, and the whole-rock geochemical contents were considered as the magma composition. Only samples with a total sum of major elements varying from 95% to 105% in EMPA were selected for thermobarometry calculation. Thus, based on the characterization of the mineralogical textures, mineral chemistry, and thermobarometry data, this work aims to discuss the magmatic system of the Paraná Province HTi tholeiitic magmatism. Pressure, temperature, and water content were obtained using thermodynamic equilibrium equations between the chemical compositions of the major elements in the minerals and the magma (whole-rock contents). Pyroxene phenocrysts crystallized between 1110 and 1180°C, at 4 to 1.6 Kbar, while plagioclase phenocrysts crystallized between 1220 and 950°C, with an H<sub>2</sub>O content varying from 0.5 to 2.5%. The plagioclase and pyroxene crystals show normal and inverse zoning patterns, with textures that indicate multiple phases of resorption and overgrowths that reflect a dynamic magmatic system.

**Palavras-Chave do trabalho:** Cretaceous magmatism; Mineral textures; Paraná Magmatic Province; Thermobarometry;