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**Área Técnica do trabalho:** TEMA 20 - Mineralogia e Petrologia Metamórfica

**Título do Trabalho:** A STUDY ON ULTRAHIGH-TEMPERATURE RUTILE-QUARTZ-SPINEL-BEARING GRANULITES FROM ANÁPOLIS-ITAUCU, BRAZIL

**Forma de apresentação:** Pôster

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**Resumo do trabalho:**

This work reports summary information about rutile + quartz + spinel-bearing ultrahigh-temperature (UHT) granulites within the Anápolis-Itaçu Complex, in central-western Brazil. The Anápolis-Itaçu Complex (AIC) has its geological context in Brasília Belt and consists of high-grade metamorphic rocks from the metamorphic core of the orogen, presenting ultra-high temperature granulites, with occurrence of mineral assemblage of spinel + quartz + ternary feldspar + rutile, sapphirine + quartz and other diagnostic paragenesis of UHT metamorphism. The present study aims to characterize the metamorphic conditions of quartz-spinel-bearing granulites from the Anápolis-Itaçu Complex, between the cities of Damolândia, Itaçu, Petrolina de Goiás and Ouro Verde de Goiás, based on phase equilibrium modeling study. The granulite samples analyzed exhibit a mineral assemblage characterized by hercynitic spinel with perthitic K-feldspar, garnet, sillimanite, quartz, ilmenite, rutile, and leucosome. Spinel has symplectite texture and sillimanite and garnet coronas surrounding the its crystals are also identified. The presence of these minerals, along with its textural patterns, indicates attainment of ultra-high temperature (UHT) metamorphic conditions. Thermodynamic modeling was calculated in one sample (CAI-42) in model system NCKFMASHTO, in P-T range between 800-1200 °C and 5-11 kbar. P-T conditions were calculated using the software Theriak\_Domino (de Capitani & Petrakakis, 2010) with "ds62" database (Holland & Powell, 2011). In the calculated pseudosection, the mineral assemblage garnet + ternary feldspar + spinel + ilmenite + sillimanite + quartz + melt was modeled within a temperature range of 940 to 1080°C and pressure between 5.5 and 8.5 kbar. Rutile-bearing fields occurs for pressures higher than 9kbar, between the range of 830 to 1050°C. This suggests a near isothermal decompression process, whereas the coronas suggest an isobaric cooling stage. The absence of a quartz + spinel + rutile field can also be attributed to the low TiO<sub>2</sub> content in the original bulk rock composition selected for analysis, due to the heterogeneous distribution of rutile in the analyzed sample.

**Palavras-Chave do trabalho:** Anápolis-Itaçu Complex; Phase equilibrium modeling; UHT-granulites; Ultrahigh-temperature metamorphism;