



Behaviour of thermal waters through granite rocks based on residence time and inorganic pattern

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SUMMARY

Thermal waters are certainly a substantial asset of the Galicia region of Spain. They can be regarded as worth developing because of their human health implications and, if thermal tourism is promoted, their importance to the local economy. In this paper the chemistry of major and trace inorganic elements in about 45 thermal springs and wells discharging in the same hydrographical system are presented and discussed. For handling the results of all measurements, graphical representations of B/Li vs. $\text{SO}_4^{2-}/\text{Cl}^-$ ratios, Hill–Piper diagram, discriminant analysis (DA) and principal component analysis (PCA) were employed. All this with the intention to classify, based on their inorganic pattern, both thermal springs and wells waters, but also waters circulating through adamellite and granodiorite rocks. The results of the hydrogeochemistry analysis showed three main water families: sulphated, chlorinated and bicarbonated waters. The results show also the presence of saline materials with chloride influence in the deeper aquifer, allowing its classification in deeper and younger/shallow waters.

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