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Analysis of enhanced gas transport in fractured rock due to barometric pressure variations

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Barometric pressure variations are often one of the main drivers of gas transport in fractured rock, a process that is referred to as barometric pumping. Barometric pressure variations are complex, multi-frequency signals influenced by latitude, weather, elevation, lunar phase, time of year, and diurnal and semi-diurnal earth tides. However, our results indicate that it is often a subset of the pressure frequencies that lead to the vast majority of transport while the majority of frequencies result in minor or even insignificant transport. Identifying the dominant pressure frequencies for transport allow us to more simply and effectively characterize the potential for gas transport to the surface at different geographic locations. We will present barometric pressure decomposition analyses on gas transport in fractured rock.

References

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