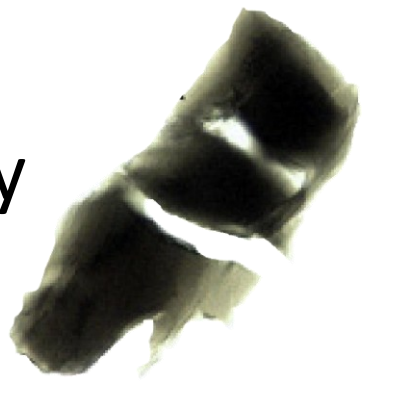


Detecting the route of Mediterranean Litter, tracing back natural volcanic pumice

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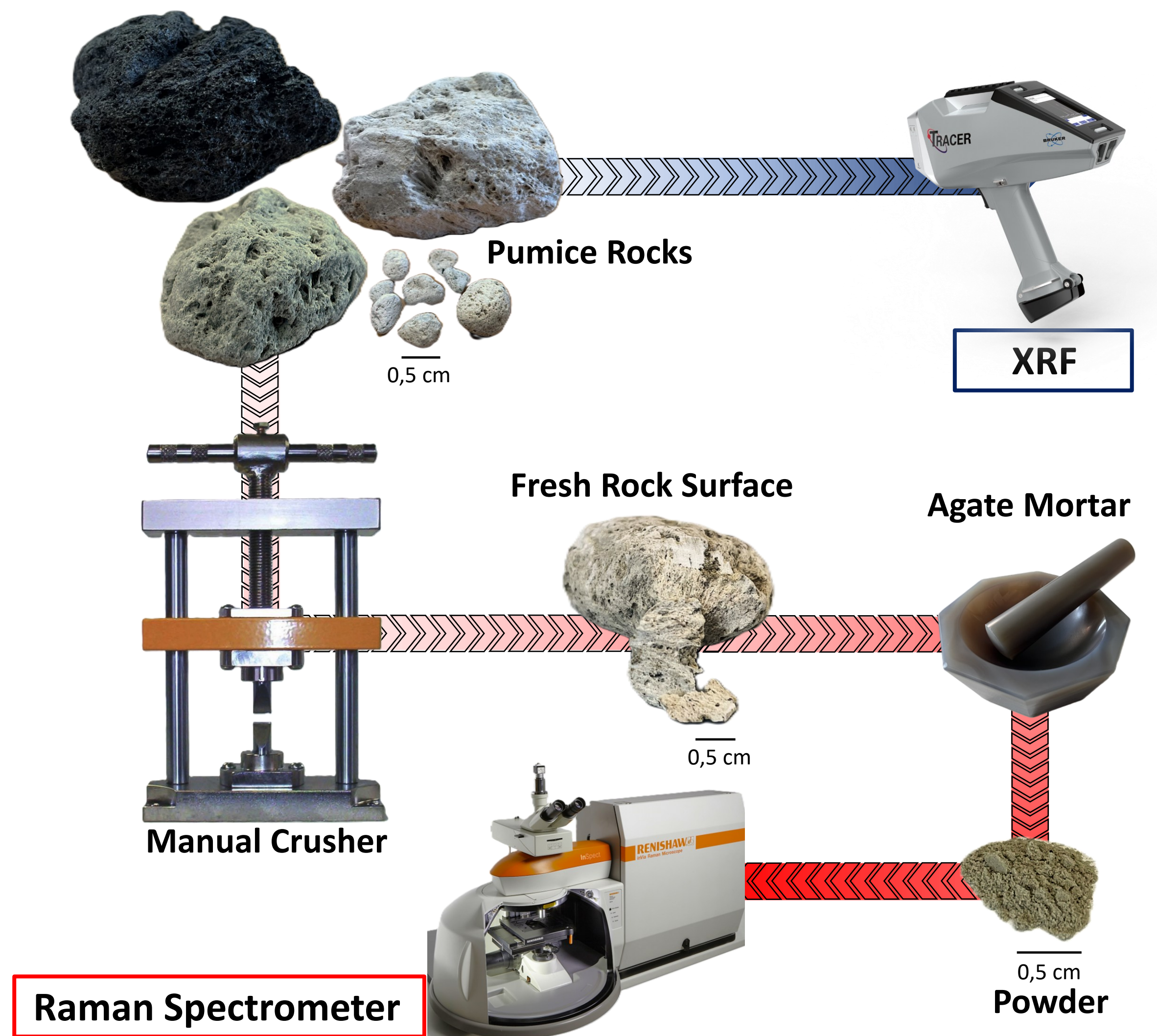
Introduction

Major storms in the Mediterranean Sea play a key role in the redistribution of floating marine debris along coastal environments. However, the relationship between extreme weather events, wave and wind action, and the transport pathways of floating litter is still poorly understood.

This study investigates the dynamics of beach macro litter (> 5 mm) along the Ionian coasts of Southern Italy after the passage of Cyclone Harry (16-23 January 2026). The project introduces an innovative approach based on the use of **floating pumice** as a natural geological analogue of plastic debris to trace dispersal patterns and identify potential source areas of pollutants. Pumice is a highly vesicular volcanic rock characterized by low density and high buoyancy, allowing long-distance transport by marine currents. Surveys were conducted on 28 beaches and one river point-bar deposit across Sicily, Calabria, Basilicata and Puglia, documenting the accumulation of both natural materials and anthropogenic floating debris, after the storm.

Understanding the redistribution of marine litter after extreme storm events is essential for improving coastal pollution management and assessing environmental impacts on ecosystems, tourism and local communities.

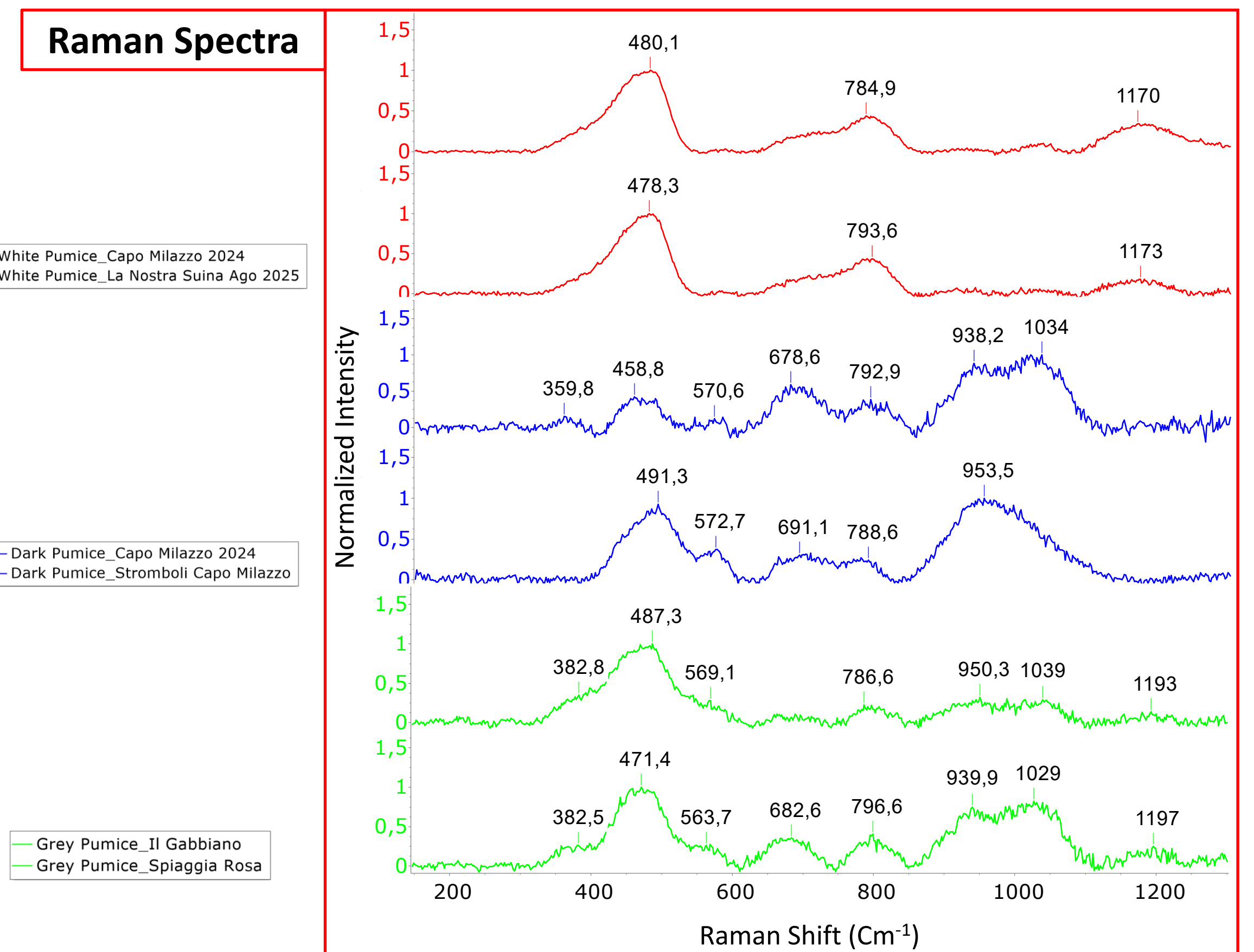
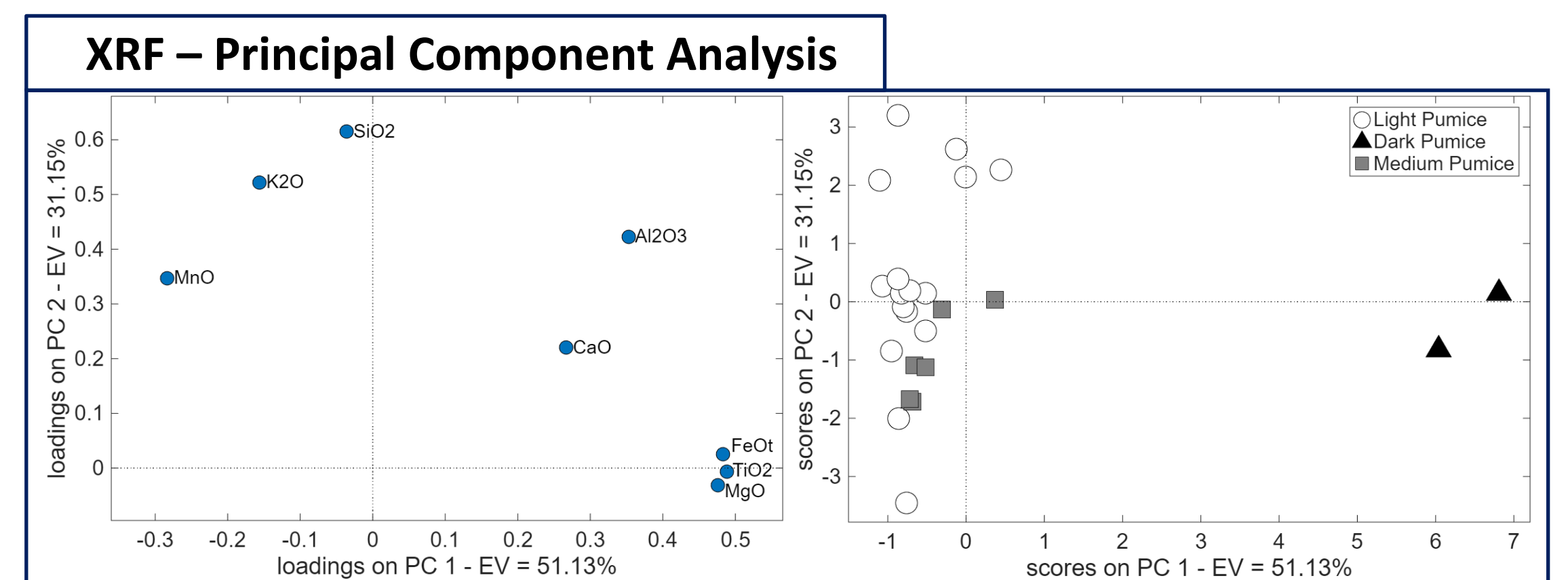
Preliminary Analysis



Field Observations



Preliminary Results



Acknowledgements

This work is supported by the Department of Excellence TECLA position on "Monitoring of the effects of ongoing climate warming and mitigation strategies and techniques". The study is prepared thanks to the facilities of The Laboratory of Provenance Studies at DISAT.