

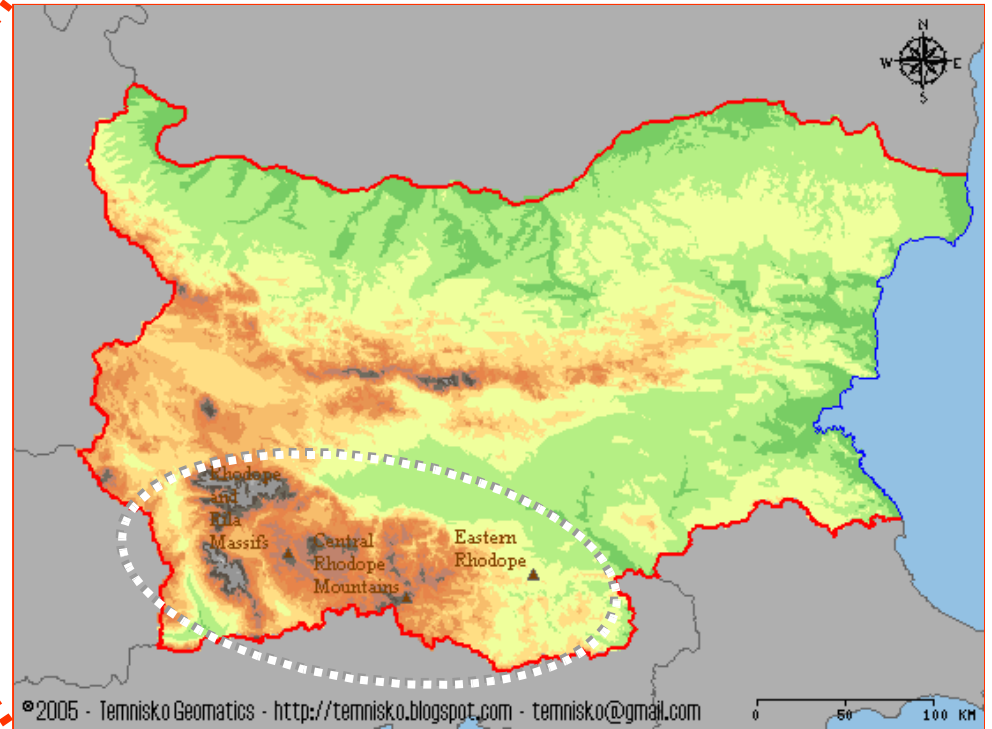
# **Decompression melting and migmatite- granite connection geochemistry: A case study from the Bulgarian Rhodope Mts**



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Some  
geography  
before

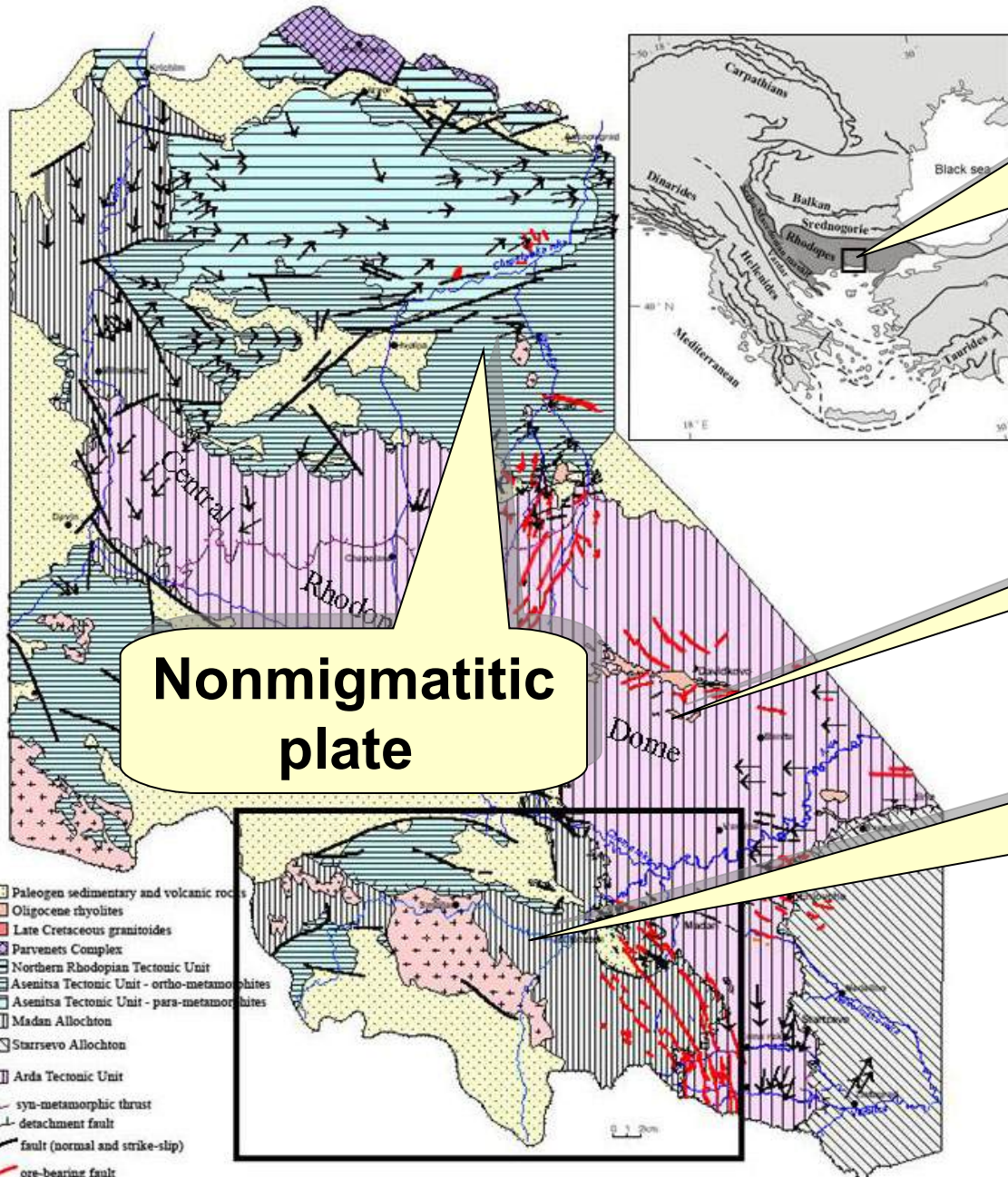
## The Geological setting



Bulgaria

Rhodope massif

Simplified Geologic Map of the Central Rhodopes



**Metamorphic core complex  
Central Rhodope Dome (CRD)**

**Diatexitic core**

**Intermediate metatexite plate (Madan unit)**

**Nonmigmatitic plate**

## Madan unite syn- to post-kinematic granites compared with CRD anatectic granites

## The objectives

### Similarities

- Felsic peraluminous compositions
- Low mafic components and contents of compatible trace elements
- High contents of incompatible LILE
- High LILE/HFSE and LREE/HREE ratios
- Negligible Eu-anomaly

### Differences

- Metaluminous compositions
- REE and HFSE enrichment
- Significant variation of LREE/HREE ratio
- Variation of Eu-anomaly values

## Discussion

Similarities → The dominant mechanism of granite magma generation is similar to that of the anatectic melts from the core of the complex.

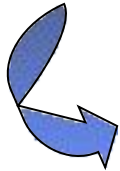
low temperature crustal melting - quartz and feldspars mainly with negligible participation of mafic and accessory minerals of the substratum.

Differences → Partial melt batches extracted from different precursor compositions at higher temperatures of melting in deeper levels of the crust

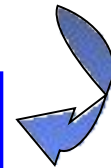
# Conclusions

Decompression melting

Migmatite-granite connection



Mechanism of generation similar to that of the CRD anatectic melt



The geochemical variation in the syn-kinematic bodies indicates a range of melt portions, which isotope signatures and time span of crystallization are important to complete the granite magmatism evolution in the CRD