**A review of Late Cretaceous-Cenozoic intraplate basin inversion in the North Atlantic-western Tethys realm**

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Premise: Intraplate basin/structural inversion is a good marker of (“far-field”) tectonic stress regime changes that are linked to plate boundary reorganisations. The premise is well-established in the literature. How Late Cretaceous- Palaeocene basin inversion has occurred in north-central Europe can be linked explicitly with the timing and style of plate break-up in the North Atlantic. Periods of intraplate tectonics (marked primarily by structural inversion in initially extensional sedimentary basins) in the North Atlantic realm will be documented and correlated and interpreted in the context of North Atlantic realm plate tectonics kinematics and processes as well as global tectonics. Examples documenting intraplate tectonics will be from published literature and primarily will be interpreted seismic reflection profiles (more inferential examples will be permitted depending on robustness of timing where no such data exist but intraplate deformation seems in evidence from other kinds of observations).

**1. Introduction [RS]**

-premise

-definitions

Fig 1 – inversion schematic

**2. Late Cretaceous-Palaeocene [RS/compiler]**

-brief statement describing the style and geographic distribution for this period

-ambiguities/uncertainties (timing)

-purpose of chosen examples

Fig. 2 – examples

Fig. 3 – map

**3. Eocene-Oligocene [RS/compiler]**

-brief statement describing the style and geographic distribution for this period

-ambiguities/uncertainties (timing)

-purpose of chosen examples

Fig. 4 – examples

Fig. 5 – map

**4. Miocene? [RS/compiler]**

-brief statement describing the style and geographic distribution for this period

-ambiguities/uncertainties (timing)

-purpose of chosen examples

Fig. 6 – examples

Fig. 7 – map

**5. Discussion [RS with all contributors]**

-correlations in the North Atlantic regime and inferences for basin cyclicity and so on….

-correlations world-wide and implications for “global tectonics”: cause and effect for plate tectonics

Fig. 8 – supporting graphics as necessary

**6. Summary and conclusions [RS]**

**Acknowledgements**

**References**

**Notes:**

Study area – expected required paleotectonic reconstructions – centred on Durham/Scotland

Fig. 3 – Late Cretaceous-Palaeocene (62 Ma?)

Fig. 5 – Eocene (45 Ma?

Fig. 7 – Miocene? (26 Ma?)

Regions for literature review with responsible contributors/vetters:

Onshore Europe/North Sea [SN/RS]

Alpine-Tethys belt [RS]

NW Atlantic/west Greenland margin to Davis Strait [AP]

Baffin Bay-west Greenland margin [AP/SJ]

Eureka/N Greenland/Nares Strait [RS]

Svalbard-Barents [CS]

East Greenland [AP/SJ]

Norway [TD]

Shetland-Faeroes [MS]