Review of paper by Garefalakis and Schlunegger entitled: Deciphering tectonic, eustatic and surface controls on the Burdigalian transgression…

General comments:

The authors have integrated a large data base consisting of previous studies and new observations to discriminate the effects of tectonics, eustatic sea level changes and variations in sediment flux in explaining the Upper Marine Molasse in the Swiss Alps. Discriminating between these controls in understanding the stratigraphic record has long been a subject of discussion amongst stratigraphers and sedimentologists and the authors are to be complimented on their contribution to this to this ongoing debate.

The paper consists of 3 main sections, Chronology, Sedimentology and Controls. The first and third sections are well argued but the sedimentology sections requires major revision including drastic shortening and reference to modern and ancient analogs in support of the conclusions of depositional environments. Such references are surprisingly lacking but are essential to presenting convincing interpretations. Also, the sedimentology section contains numerous examples of interpretations within the descriptive sections and vice versa. In its present form, the paper contains too much sedimentological detail that detracts from the overall message of the paper. I suggest reducing the sedimentological descriptions and interpretations by at least 50% in this paper and to prepare a separate paper that focusses on the sedimentology. The parts of the sedimentological analysis that are germane to this paper the recognition of shoreline and offshore subtidal sand shoals whereas the other details are not necessary for this paper.

Specific comments:

1. Use of the term “surface controls” in the title and throughout the paper is vague and confusing. Both eustasy and sediment flux are surface controls as noted by the authors so why not just specify eustasy and sediment flux and do away with “surface”?
2. I was not able to access the Table or Appendix but it seems to me that the 2 seismic sections should be included as a figure in the paper because they are referred to in many parts of the text.

Technical suggestions:

1. The attached document contains numerous grammatical and editorial suggestions and comments on both the text and figures for the authors to consider in their revision.

2. As part of my review, I have prepared a document of revised figure captions which is attached for the authors' consideration.