SELECTED PUBLICATIONS

1 - Plaza-Faverola, A., G. K. Westbrook, S. Ker, R. Exley, A. Gailler, T. Minshull and K. Broto**,** Evidence from tomographic investigation of Vp variation for accumulation of substantial methane hydrate in a fluid-escape chimney in the Nyegga pockmark field, offshore Norway. ***JGR solid earth***, **(2010)** v. 115, B08104, doi:10.1029/2009JB007078.

Citations: 56 (source: Google Schoolar)
Second out of 4 papers comprising the PhD thesis. Succeeded at completing a seismic tomopgraphy for the investigation of the internal structure of gas chimneys at continental margin. This is the only time such a complex experiment has been completed and such a successful result made the min-Norwegian margin a key laboratory for the investigation of gas chimneys using additional geophysical techniques (e.g., Control Source Electro-Magnetics) that require velocity information as the one obtained with the tomography. The insights gained from this study are worldwide reference in studies of the internal structure of gas chimneys at continental margins.

2- Plaza-Faverola, A., Bünz, S., and Mienert, J., Repeated fluid expulsion through sub-seabed chimneys offshore Norway in response to glacial cycles: ***Earth and Planetary Science Letters***, **(2011)** v. 305, p. 297-308.

Citations: 97 (source: Google Schoolar)
Third out of 4 papers comprising the PhD thesis. Using a novel technique to interpret 3D seismic data, this study documents a link between periods of methane release off mid-Norway and ice-sheet advances and retreats. We found out that gas seepage started hundred thousands of years ago, that rather to be continuous seepage was episodic, and that seepage intensified during inter-glacial periods. This study motivated numerous investigations of seepage periodicity using paleontological proxies and modeling techniques in different continental margins (e.g., off west Svalbard, Hikurangi margin, Gulf of Lyon)

3- Plaza-Faverola, A., Klaeschen, D., Barnes, P., Pecher, I., Henrys, S. and Mountjoy, J., Evolution of fluid expulsion and concentrated hydrate zones across the southern Hikurangi subduction margin, New Zealand: An analysis from depth migrated seismic data. ***Geochemistry, Geophysics, Geosystems*** **(2012)** 13.

Citations: 51 (source: Google Schoolar)
This is the first out of 3 papers as first author during the 2 years- post doc in New Zealand. The study documented a migration of gas from the subduction interface toward the seafloor and associated gas hydrate accumulations at the southern Hikurangi margin. The velocity models and analysis from this investigation have been used by several others to advance knowledge about petroleum systems, near-surface gas and hydrates accumulations, and links between seismological activity and fluid migration in the region.

4- Plaza-Faverola, A.; Bünz, Stefan; Johnson, J.E.; Chand, Shyam; Knies, Jochen; Mienert, Jurgen; Franek, Peter. Role of tectonic stress in seepage evolution along the gas hydrate-charged Vestnesa Ridge, Fram Strait. ***Geophysical Research Letters*** **(2015)**; Volum 42 (3). ISSN 0094-8276.s 733 - 742.s doi: 10.1002/2014GL062474.

Citations: 60 (source: Google Scholar)
This paper documents the influence of the tectonic regime and regional forces on the periodicity of methane release at continental margins. A thorough seismic investigation revealed fine-scale faults and fractures that control the distribution of seepage sites along the west-Svalbard margin in the Fram Strait. These findings boosted the knowledge about near surface fluid flow and hydrate systems in this Arctic region. The results inspired a research direction at the Center for Arctic Gas Hydrate, Environment and Climate, resulting in numerous cross-disciplinary investigations as well as in a large project – The

Seamstress project – that is now supported by the Tromsø Research Foundation (TFS) and the Research Council of Norway (NCR) through their starting grant project.

5- Himmler, T**.**, Sahy, D., Martma, T., Bohrmann, G., **Plaza-Faverola, A.,** Bünz, S., Condon, D.J., Knies, J. and Lepland, A., A 160,000-year-old history of tectonically controlled methane seepage in the Arctic. ***Science advances*** **(2019)** 5, eaaw1450.

This recent paper confirms, with sediment samples and carbonate proxies, the seismic interpretation and hypothesis put forward by Plaza-Faverola et al., 2015 (paper listed above) and a more recent paper (Plaza-Faverola and Keiding, Solid Earth paper). This is, that historical methane release episodes in the Arctic, as for the mid-Norwegian margin (Plaza-Faverola et al., 2012, listed above), intensified with the onset of glaciations and that they are closely associated with tectonics and glacial related physical processes.