Day: **Wednesday 25th April**
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Control of Top Seal Age and Depositional Facies on Gas Column Heights in Carbonate Reservoirs of the Central Nam Con Son Basin, Vietnam

Rob Satter
BP Vietnam

The paper investigates the major controls on hydrocarbon column height in three gas accumulations in the central Nam Con Son basin; the Lan Tay-Lan Do gas fields and the marginal Bac gas discovery. The reservoir rock for all three pools consists of limestones deposited on an extensive carbonate platform of Mid-Late Miocene age.

The top seal for these accumulations is provided by the lower slope mudstones of the Plio-Pleistocene proto Mekong delta. This massive system, prograding from west to east, also delivers the overburden required to mature source rocks across most of the Nam Con Son Basin.

Extensive mapping of this system was carried out, along with interpretation of the seismic facies in a sequence stratigraphic framework. Combined with well data, this resulted in the construction of GDE (Gross Depositional Environment) maps of the post-rift sequence. The maps indicate a relationship between the age of downlapping prograding clinoforms and gas column height.

The Lan Tay field is covered by condensed mudstones of Early Pliocene (T90) age, which corresponds to a maximum flooding event in the basin. The Lan Tay field also has the largest gas column (122 m). Progradation of the proto-Mekong system reached the Lan Do field area by the Late Pliocene, corresponding to a gas column of 66 m. Clinoforms overlying the Bac discovery are of Pleistocene age, and incidentally a 25 m column was found in the well.

The remarkable relationship outlined above suggests that gas column height in this part of the Nam Con Son Basin is controlled by the age and clay content of the bottom sets of the overlying clinoforms, and could thus serve as a predictive tool in exploration. It should be emphasized that other factors, such as available hydrocarbon charge and pore pressure evolution, are likely to interfere with this control, stressing the importance of integrating all available data as part of the exploration workflow.