



**Gas Exploration Production and Field Development
in the Pannonian Basin
Workshop**

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Society of Petroleum Engineers

Laboratory Tests for Enhanced Gas and Condensate Recovery

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MOL Plc.

Laboratory tests

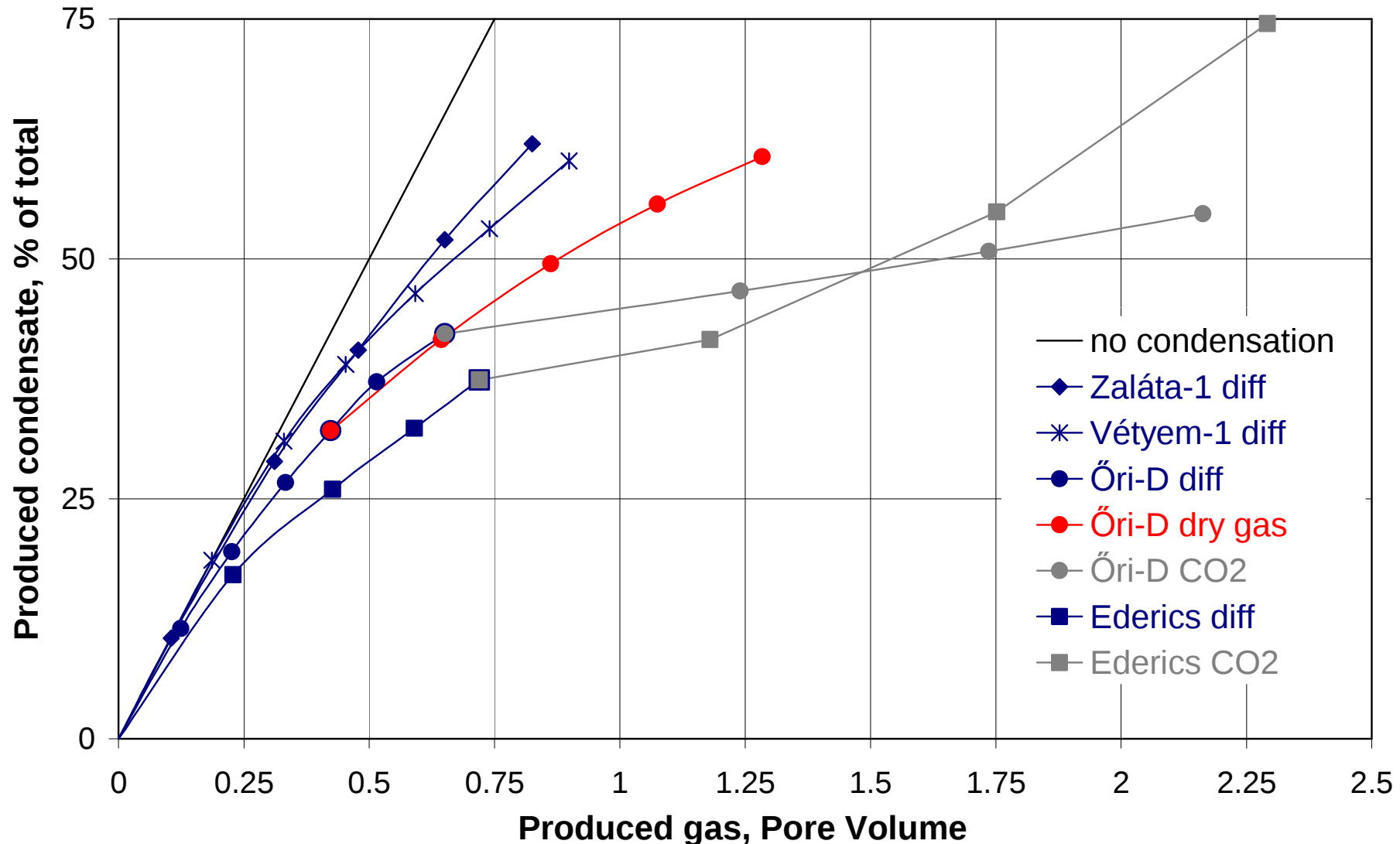
Conducted
in
windowed
PVT
apparatus



Laboratory tests

- Determination of phase behaviour,
z, Bg, density,
composition
- Various EGR scenarios:
Different abandonment pressures,
injection/production ratios (pressure boost)
Different injection gases: separator gas,
(dry) pipeline gas,
carbon dioxide,
carbonated natural gas,
nitrogen

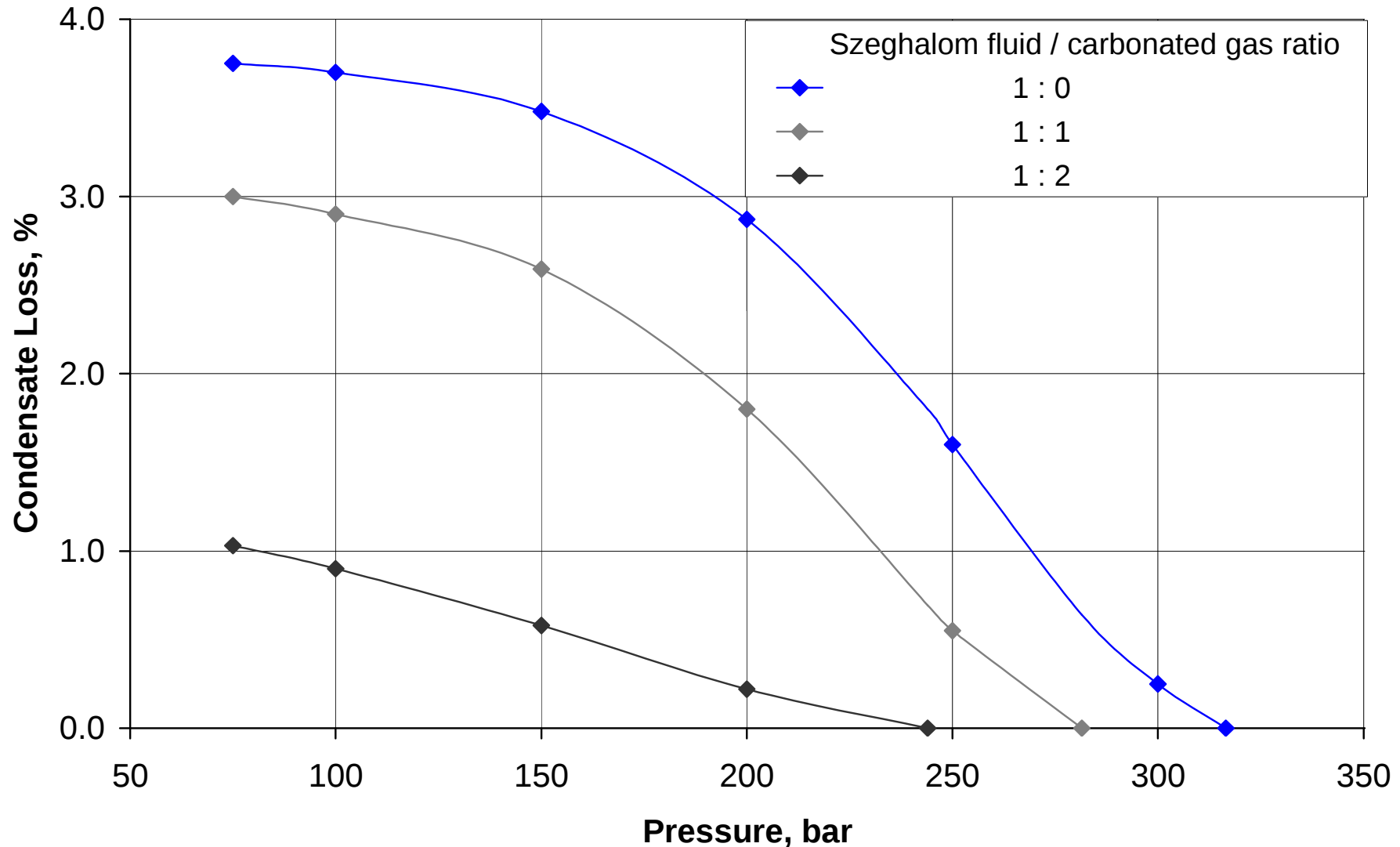
Comparison of produced condensate in different fields



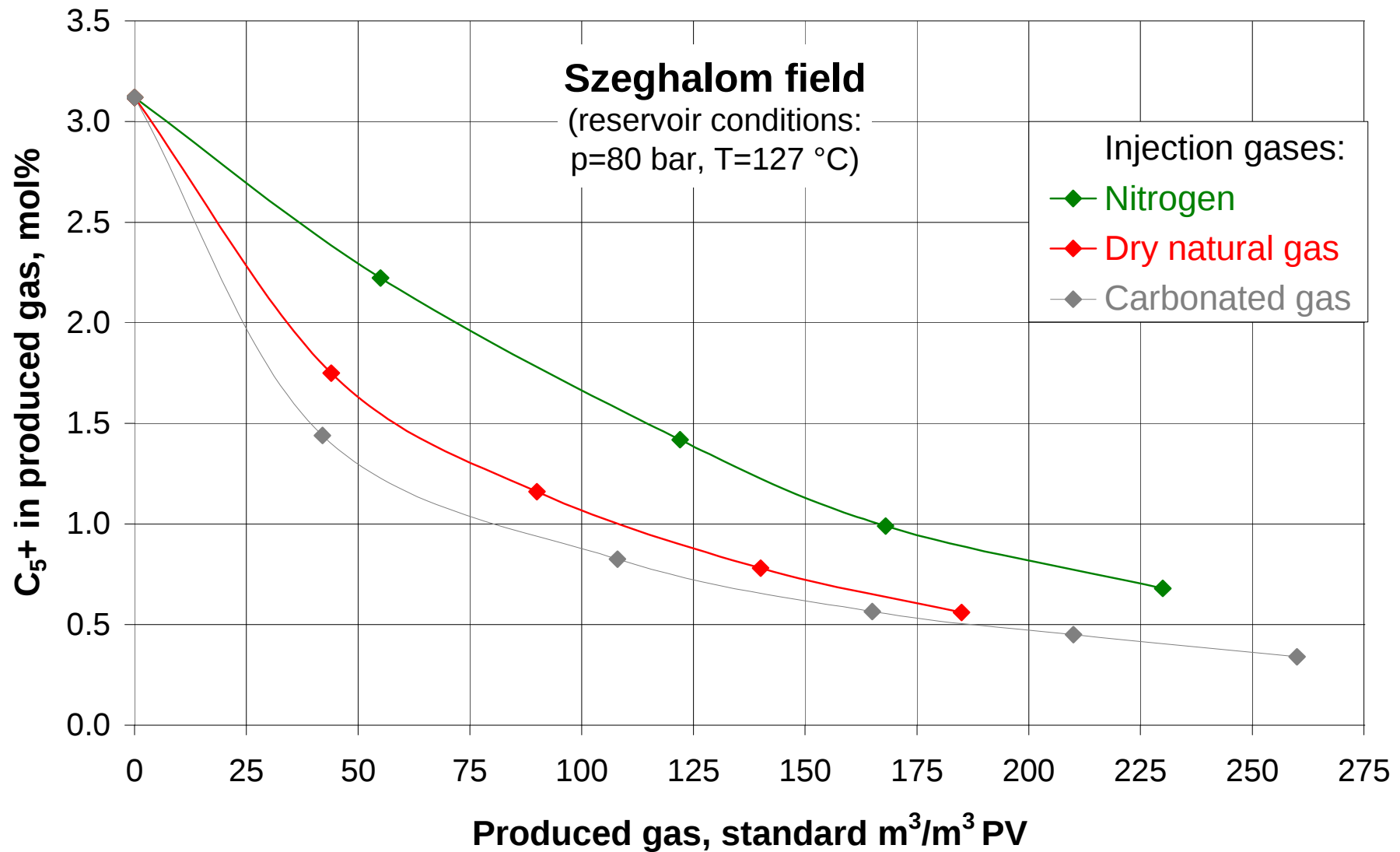
Phase behaviour response on gas injection

- Dewpoint pressure drop
- Diminishing retrograde condensation (pressure maintenance)
- Revaporizing condensate bank
- Change in B_g :
more (CO_2) or less (CH_4 , N_2) gas in reservoir

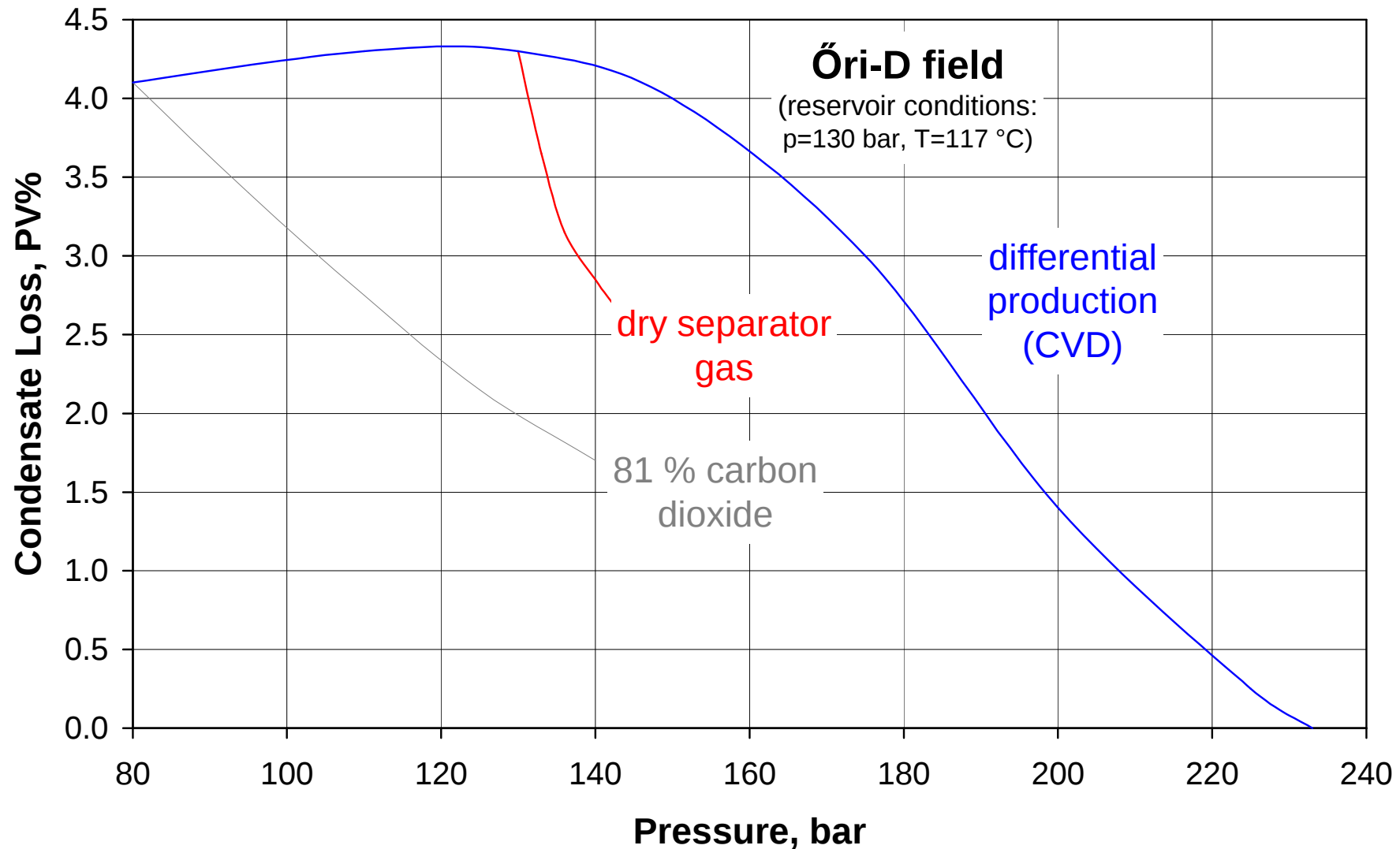
Szeghalom reservoir fluid mixed with 54 % CO₂-content gas



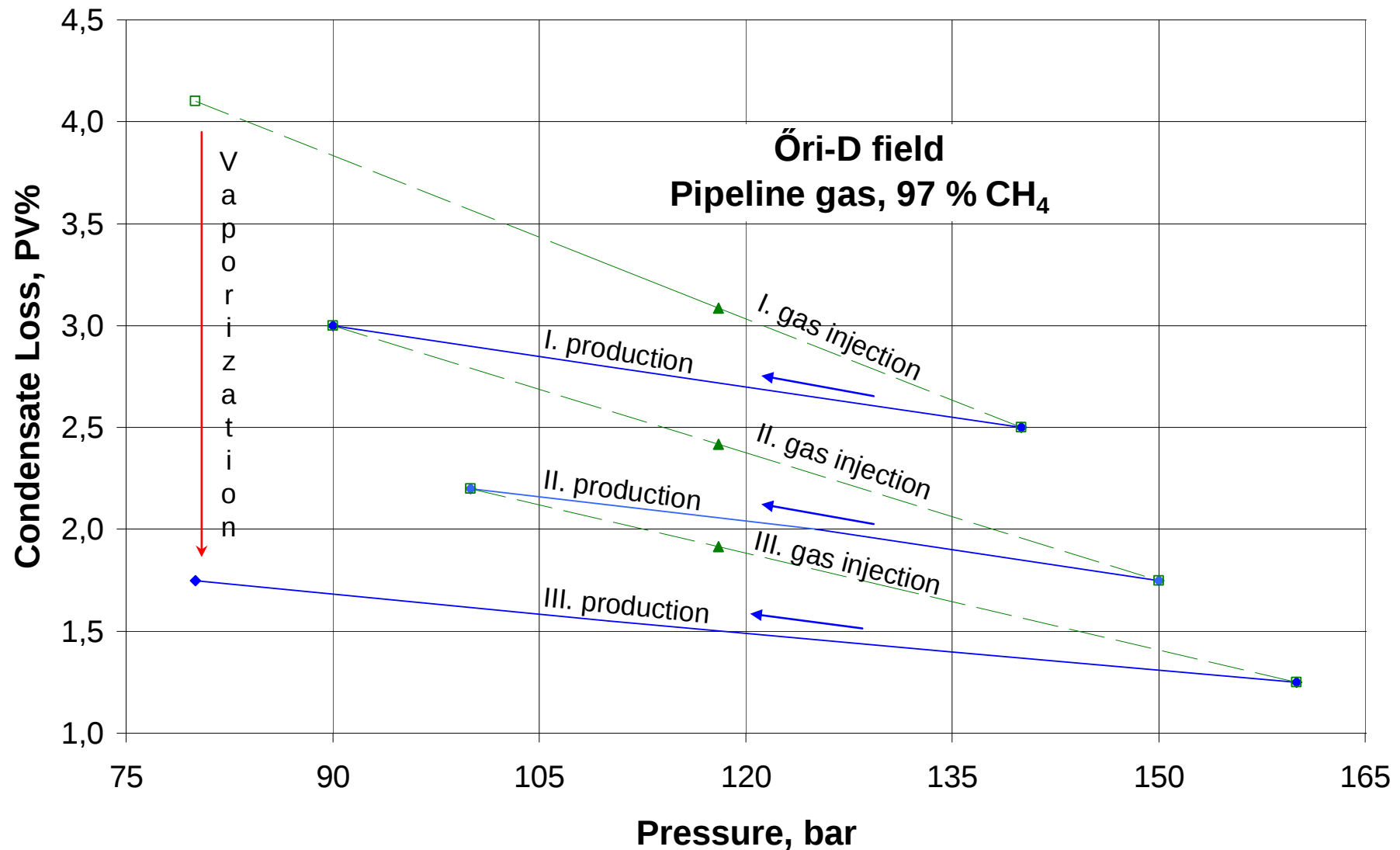
Gas cap replacement test



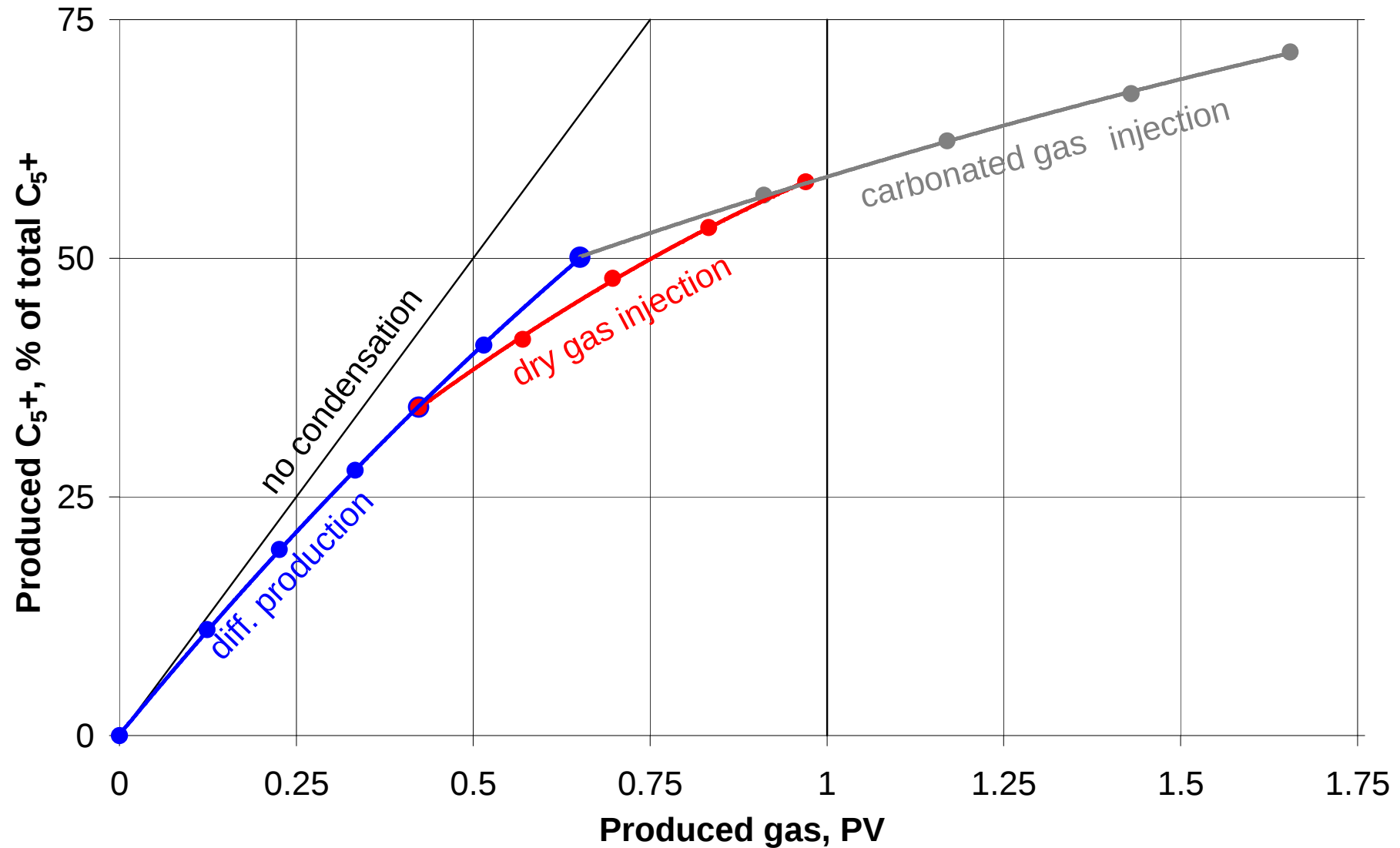
Gas injection and displacement



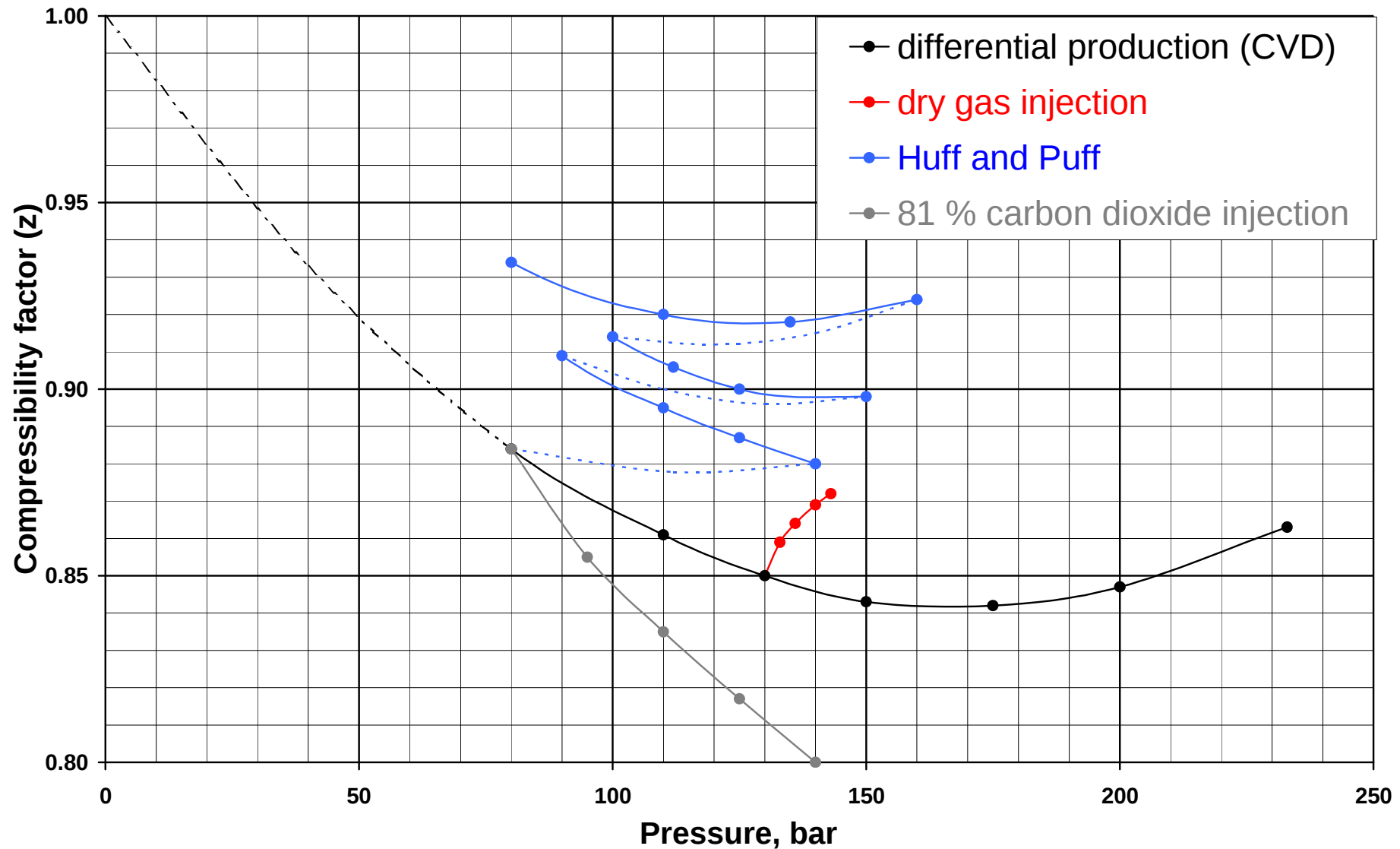
HUFF&PUFF wellbore treatment



Őri-D field, C₅+ production



Őri-D, variation of z factor



Summary

- Simulation of gas displacement EGR
 - Efficiency of condensate recovery determined
 - Utilization in gas storage and pressure maintenance
- Change in reservoir composition:

Rich gas	→	Dry gas
Hydrocarbon gas	→	Inert gas
- Green house gas sequestration

**Thank you for
your attention!**