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Calculation of the second virial coefficients of alkali metals by modified Peng-Robinson equation. (English) [Zbl 1421.82036](#)
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The authors use the Peng-Robinson equation of state with specifically chosen temperature dependence and, by expanding it into Taylor series, they obtain the second virial coefficient. This coefficient, whose practical application can be found in metallurgy, is calculated for alkali metals in the temperature range 600–3000 K and the obtained results are more accurate in comparison with the existing ones in the literature. The applied procedure can also be extended to metal vapors of other non-alkali elements.

Reviewer: [Vladimir Čadež](#) (Beograd)

MSC:

- 82D05 Statistical mechanical studies of gases
- 82D35 Statistical mechanical studies of metals
- 76N99 Compressible fluids and gas dynamics, general

Keywords:

modified Peng-Robinson equation of state; second virial coefficient; alkali metal vapors

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