

## Revisions of the Supplementary Releases on Backward Equations IAPWS-IF97-S01, -S03rev, -S04, and -S05

H.-J. Kretzschmar and W. Wagner

### Reason for the Revisions

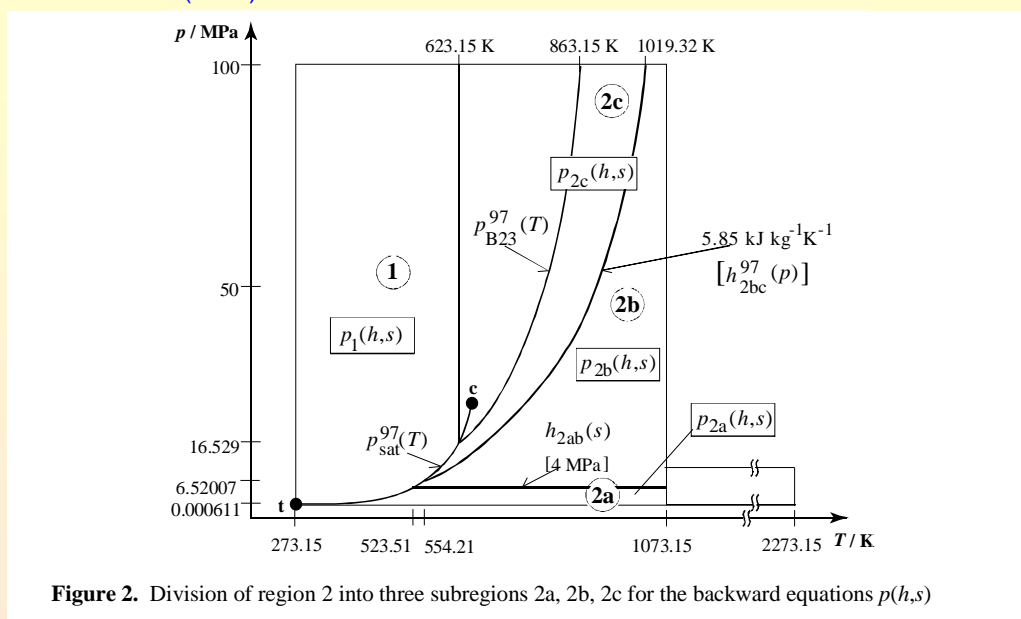
While programming the algorithms of the Supplementary Releases on Backward Equations IAPWS-IF97-S01, -S=3rev, -S04, and -S05, Konstantin Orlov found out that some descriptions how to determine in which region or subregion a given state point is located not correct.

IAPWS Annual Meeting, Moscow, 2014

1

### Example

Supplementary Release on Backward Equations for Pressure as a Function of Enthalpy and Entropy  $p(h,s)$  to the IAPWS Industrial Formulation 1997 for the Thermodynamic Properties of Water and Steam (2001)



### Original Text

If the given specific enthalpy  $h$  is higher than  $h_{2ab}(s)$  calculated from the given specific entropy  $s$ , then the point of state to be calculated is located in subregion 2b, otherwise it is in subregion 2a (see Figure 2).

IAPWS Annual Meeting, Moscow, 2014

2

**Revisions have been prepared for:**

Revised Supplementary Release on Backward Equations for Pressure as a Function of Enthalpy and Entropy  $p(h,s)$  for Regions 1 and 2 of the IAPWS Industrial Formulation 1997 for the Thermodynamic Properties of Water and Steam (IAPWS-IF97-S01)

Revised Supplementary Release on Backward Equations for the Functions  $T(p,h)$ ,  $v(p,h)$  and  $T(p,s)$ ,  $v(p,s)$  for Region 3 of the IAPWS Industrial Formulation 1997 for the Thermodynamic Properties of Water and Steam (IAPWS-IF97-S03rev)

Revised Supplementary Release on Backward Equations  $p(h,s)$  for Region 3, Equations as a Function of  $h$  and  $s$  for the Region Boundaries, and an Equation  $T_{\text{sat}}(h,s)$  for Region 4 of the IAPWS Industrial Formulation 1997 for the Thermodynamic Properties of Water and Steam (IAPWS-IF97-S04)

Revised Supplementary Release on Backward Equations for Specific Volume as a Function of Pressure and Temperature  $v(p,T)$  for Region 3 of the IAPWS Industrial Formulation 1997 for the Thermodynamic Properties of Water and Steam (IAPWS-IF97-S05)

**In addition to the mentioned corrections, the figures and references have been updated.**