HOCHSCHULE ZITTAU/GÖRLITZ (FH)
UNIVERSITY OF APPLIED SCIENCES

FACULTY OF MECHANICAL ENGINEERING
Department of Technical Thermodynamics
Prof. Dr.-Ing. habil. H.-J. Kretzschmar
Dr.-Ing. I. Stöcker

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1. Development of equations for the backward functions p = f(h,s) and T(h,s) for water and steam and equations v = f(p,T) for the critical and supercritical regions of water
   - The backward equations p = f(h,s) were refitted and successfully tested in process modelling. They can be used in combination with the new industrial formulation IAPWS-IF97.
   - The equations v = f(p,T) for the critical and supercritical regions were completed. They can be used for calculating very accurate starting values in the iteration of the specific volume from the Helmholtz equation of the IAPWS-IF97 formulation.

2. Preparation of program packages including the new industrial formulation IAPWS-IF97 for the power industry
   - The Dynamic Link Library LibIF97 was extended to the calculation of any differential quotients.
   - The Add-In FluidEXL for Excel® including graphical representation of the calculated values in thermodynamic charts was improved.
   - The DLL FluidMAT for Mathcad® was completed.
   - The Windows dialog program FluidDAT including graphical representation of the calculated values in thermodynamic charts was improved.

3. Implementation of the new industrial formulation IAPWS-IF97 on pocket computers
   - The program FluidTI was set up for the models TI 92 and TI 89 of Texas Instruments®.
   - The program FluidCASIO was set up for the model FX 880P of CASIO®.

4. Preparation of program packages including the new industrial formulation IAPWS-IF97 for education
   - Versions for students of the Add-In FluidEXL for Excel® and FluidMAT for Mathcad® were prepared.
   - Versions for students of FluidTI for the pocket computers TI 92 and TI 89 and FluidCASIO for CASIO FX 880P were prepared.

Zittau, September 02, 1999

H.-J. Kretzschmar I. Stöcker