Conclusions

- The formulation for a 3–dimensional Eulerian/Lagrangian approach and its implementation (FAN–3D/PartFlow) has been presented.
- With FAN–3D/PartFlow an efficient tool for the numerical prediction of disperse gas–particle flows in complex 3-dimensional geometries is given.
- Comparison of numerical results with experimental data for the prediction of particle precipitation in standard cyclones show good agreement.
- Fields of possible application of the derived numerical method are :
  - pneumatic and hydraulic transport/conveying
  - particle precipitation, particle classification
  - erosion prediction
  - spray drying processes, gas–droplet flows, sprays
  - pulverized fuel combustion (coal processing/mills, pneumatical conveying, combustion, cleaning of flue gases)

Further development :

- Implementation of a particle–particle collision model.
- Further development of parallelization algorithms for MIMD parallel computers (Enhanced DSM)
- Simulation of phase coupled, 3d, disperse multiphase flows for particle loading ratios $m \approx 0.1 \ldots 5.0$
- Simulation of non stationary multiphase flows

Homepage (SIVUS gGmbH, Research Group of Multiphase Flows) :

http://www.tu–chemnitz.de/mbv/TechnThDyn/sivus/index.html
http://www.tu–chemnitz.de/mbv/TechnThDyn/mpf/mpf_numerik.html