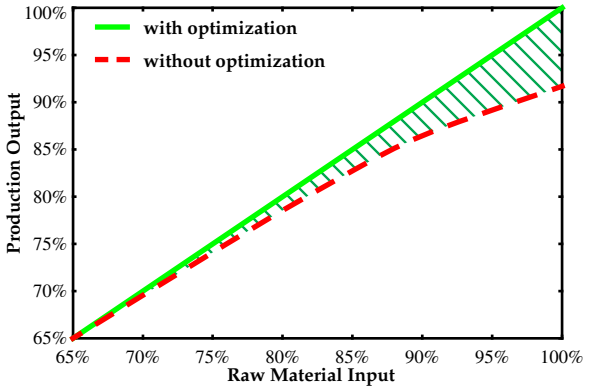
oriented techniques, e.g. inheritance, facilitate the adaptation to other problems.

Optimization: In order to optimize the various parameters of the plant the simulation is linked together with suitable optimization routines.

PLC Programming: There's no difference between input to control the simulation models or an actual factory system. As long as the simulation is written to emulate all the I/Os of the actual system, the PLC program can be fully written, debugged, and tested in the simulated environment.

The key to a complete solution

An increase of the production output can often be realized as is shown below for a project with one of our industrial partners.



Production output before and after parameter optimization

References

[1] J. Biedermann, L. Cromme, L. Rhede, K. Weber, and S. Würll. "Simulation and Optimization of a Production Process in Brown Coal Industry", Reihe Mathematik M-07/97, Technische Universität Cottbus, 1997

[2] L. Rhede. "Früher per Hand, jetzt elektronisch geregelt", LAUBAG report 8, No. 3, p. 4, 1997

[3] S.Würll, J.Biedermann, L.Cromme, and K.Weber. "Optimization of Quality Checks in a Fully Automated Production Process", Reihe Mathematik M-08/97, Technische Universität Cottbus, 1997

The Chair for Numerical and Applied Mathematics

Address

Lehrstuhl für Numerische
und Angewandte Mathematik
BTU Cottbus
P.O. Box 10 13 44
D-03013 Cottbus
Germany
Tel. +49 - 355 - 69 27 77
Fax +49 - 355 - 69 27 76
E-mail: agia@math.tu-cottbus.de
WWW: http://www.math.tu-cottbus.de

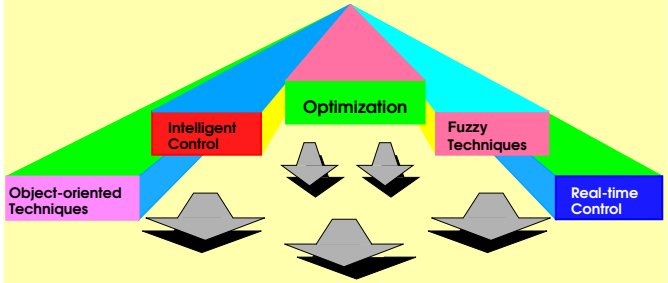
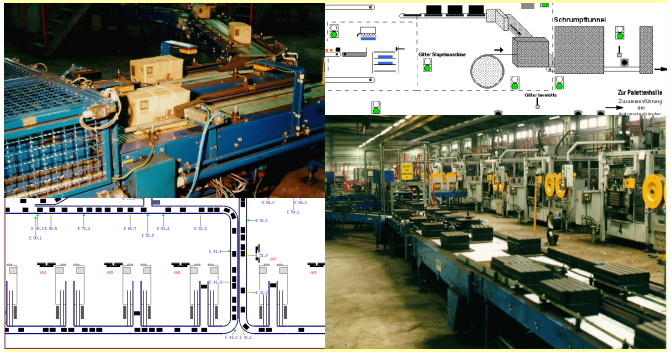
Related Research Activities

- Application of Fuzzy techniques in modelling and control
- Real-time colour image processing for industrial quality checking purposes
- Optimal design of heat or power supply networks by means of Genetic Algorithms
- Practical applications of partial differential equations (FDM, FEM and BEM) in CAD
- Training algorithms for recurrent Artificial Neural Networks

Contact

Prof.Dr. Ludwig Cromme	(Tel. 69-2777)
Dipl.-Math. Jochen Biedermann	(Tel. 69-3193)
Dipl.-Math. techn. Klaus Weber	(Tel. 69-2779)
Dipl.-Math. Stephan Würll	(Tel. 69-2779)

Brandenburgische
Technische Universität
Cottbus

Lehrstuhl für Numerische
und Angewandte Mathematik

Process Simulation and Optimization