

Curated bibliography of two decades research in advanced automation and control methods for the European steel production

Preliminary Version - To be finalized

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References

- [1] T. J. Baron, A. Latz, S. Schreiber, J. Hülstrung, and A. Kern, “steelytics® hot rolling - calculation of steel properties over strip length,” in *Proceedings of METEC and 4th ESTAD 2019*, 2019. AutoAdapt.
- [2] D. R. B. H. Ford, F. Ellis, “Cold rolling with strip tension,” *Journal of Iron and Steel Institute*, 1951. AutoAdapt.
- [3] J. H. Hitchcock, “Elastic defomation of rolls during cold rolling,” *ASME Report of Roll-Neck-Bearings*, 1935. AutoAdapt.
- [4] G. L. M. Sokolova, “A systematic analysis of performance measures for classification tasks,” *Information Processing and Management Vol. 45*, pp. 427–437, 2009. AutoAdapt.
- [5] G. N. S. Cateni, V. Colla, “A multivariate fuzzy system applied for outliers detection,” *Journal of Intelligence and Fuzzy Systems Vol. 24*, pp. 889–903, 2013. AutoAdapt.
- [6] D. S. J. M. R. Garey, *Computers and intractability: A guide to the Theory of NP-Completeness*. W. H. Freeman, 1979. AutoAdapt.
- [7] F. Grandoni, “A note on the complexity of minimum dominating set,” *Journal of Discrete Algorithms Vol. 4 (2)*, 2006. AutoAdapt.
- [8] J. D. Gibbons, *Nonparametric statistical inference*. 2nd Ed. M. Dekker, 1985. AutoAdapt.
- [9] B. K. P. T. J. Chambers, W. Cleveland, *Graphical methods for data analysis*. Wadsworth, 1983. AutoAdapt.
- [10] M. V. S. Cateni, V. Colla, “Variable selection through genetic algorithms for classification purposes,” in *Proceedings of the 10th IASTED International Conference on Artificial Intelligence and Applications, AIA*, pp. 6–11, 2010. AutoAdapt.
- [11] A. M. A. V. S. Cateni, V. Colla, “Pre-processing for neural model design in a real industrial problem,” *International Journal of Simulation-Systems, Science Technology*, 2019. AutoAdapt.
- [12] K. J. Aström, *Introduction to Stochastic Control*. Academic Press, 1970. AutoCheck.
- [13] C. G. S. Bezergianni, “Controller performance assessment based on minimum and open-loop output variance,” *Control Engineering Practise 8*, pp. 791–797, 2000. AutoCheck.
- [14] T. H. L. Desborough, “Performance assessment measures for univariate feedback control,” *Can. J. Chem. Eng. 70*, pp. 1186–1197, 1992. AutoCheck.
- [15] T. H. L. Desborough, “Performance assessment measures for univariate feedforward / feeback control,” *Can. J. Chem. Eng. 71*, pp. 605–616, 1993. AutoCheck.
- [16] A. J. I. P. Eriksson, “Some aspects of control loop performance monitoring,” in *Proc. of the IEEE Conf. Control Applications, Glasgow, Scotland*, pp. 1029–1034, 1994. AutoCheck.
- [17] L. Ettaleb, *Control Loop Performance Assessment and Oscillation Detection*. PhD thesis, University of British Columbia, Canada, 1999. AutoCheck.

- [18] G. A. D. E. K. L. Ettaleb, M. S. Davies, "Monitoring oscillations in a multiloop system," in *Proc. of the IEEE Int. Conf. Control Applications, Dearborn, USA*, pp. 859–863, 1996. AutoCheck.
- [19] A. S. K. Forsman, "A new criterion for detecting oscillations in control loops," in *Proc. Europ. Control Conference, Karlsruhe, Germany*, 1999. AutoCheck.
- [20] T. Häggglund, "A control-loop performance monitor," *Contr. Eng. Pract.* 3, pp. 1543–1551, 1995. AutoCheck.
- [21] T. Häggglund, "Automatic detection of sluggish control loops," *Contr. Eng. Prac.* 7, p. 1505:1511, 1999. AutoCheck.
- [22] T. Harris, "Assessment of closed loop performance," *Can. J. Chem. Eng.* 67, pp. 856–861, 1989. AutoCheck.
- [23] J. F. M. Harris T., F. Boudreau, "Performance assessment using of multivariable feedback controllers," *Automatica* 32, pp. 1505–1518, 1996. AutoCheck.
- [24] T. Harris and C. T. Seppala, "Recent developments in performance monitoring and assessment techniques," in *Proc. Chemical Process Control VI, Tuscon, published in AIChE Symposium Series, Vol. 98, 2002, J. B. Rawlings, O. Babatunde, J. Eaton (eds.)*, 2002. AutoCheck.
- [25] M. Jelali, "Performance assessment of control systems in rolling mills - application to strip thickness and flatness control," *Journal of Process Control*, 2007. AutoCheck.
- [26] A. J. I. A. Horch, "A modified index for control performance assessment," *Journal of Process Control*, 1999. AutoCheck.
- [27] S. L. S. B. Huang, *Performance Assessment Control Loops*. Springer, 1999. AutoCheck.
- [28] E. K. K. B. Huang, S. L. Shah, "Good, bad or optimal? performance assessment of multivariable processes," *Automatica Vol. 33*, pp. 1175–1183, 1997. AutoCheck.
- [29] A. Ingimundarson, *Dead-time compensation and performance monitoring in process control*. PhD thesis, Lund Institute of Technology, Sweden, 2003. AutoCheck.
- [30] J. M., "An overview of control performance assessment technology and industrial applications," *Contr. Eng. Prac.* 14, pp. 441–466, 2006. AutoCheck.
- [31] J. M., "Regelkreisüberwachung in der metallindustrie: Anforderungen, stand der technik und anwendungen," in *Proc. GMA-Kongress, Baden-Baden, Germany*, 2005. AutoCheck.
- [32] A. C. S. Kendra, "Controller performance assessment by frequency domain techniques," *J. Proc. Control* 7, pp. 181–194, 1997. AutoCheck.
- [33] C. Kozub, D. J. ; Garcia, "Monitoring and diagnosis of automated controllers in the chemical process industries," in *Proc. A. I. Ch. E., St. Louis, USA*, 1993. AutoCheck.
- [34] B. Ko and T. F. Edgar, "Assessment of achievable pi control performance for linear processes with dead time," in *Proc. American Control Confer., Philadelphia, USA*, 1998. AutoCheck.
- [35] L. C. D. G. A., "Control loop performance monitoring," *IEEE Trans. Contr. Syst. Technol.* 18, pp. 151–192, 1996.
- [36] S. Björklund, *A survey and comparison of time delay estimation methods in linear systems*. PhD thesis, Lund Institute of Technology, Sweden, 2003.
- [37] Q. S. J., "Control performance monitoring - a review and assessment," *Comput. Chem. Eng.* 23, pp. 173–186, 1998. AutoCheck.
- [38] R. R., "A watchdog for controller performance monitoring," in *Proc. American Control Conference, Seattle, USA*, p. 1995, 1995. AutoCheck.
- [39] J. F. M. N. Stanfelj, T. E. Marlin, "Monitoring and diagnosis of process control performance: the single-loop case," *Ind. Eng. Chem. Res.* 67, pp. 856–861, 1993. AutoCheck.
- [40] D. E. Swanda A.; Seborg, "Evaluating the performance of pid-type feedback control loops using normalized stteling time," in *Proc. IFAC ADCHEM, Banff, Canada*, pp. 283–288, 1997. AutoCheck.
- [41] T. N. O. M. F. M. S.;, "Refinery-wide control loop performance assessment," *Journal of Process Control* 9, pp. 109–124, 1999. AutoCheck.

- [42] T. M. M. M., "Performance assessment for unstable and nonminimum-phase systems," in *Preprints IFAC Workshop On-line Fault Detection Supervision Chemical Process Industries, Newcastle upon Tyne, UK*, 1995. AutoCheck.
- [43] M. Tyler, M.; Morari, "Performance monitoring of control systems using likelihood methods," *Automatica* 32, pp. 1145–1162, 1996. AutoCheck.
- [44] V. G. S. V. S. R. R. R. R., "An automated on-line monitor of control system performance," in *Proc. American Control Conference, Albuquerque, USA*, pp. 1355–1359, 1997. AutoCheck.
- [45] A. Visioli, "Assessment of tuning of pi controller for self-regulating processes," in *Proc. IFAC World Congress, Prague, CZ*, 2005. AutoCheck.
- [46] A. Jämsä-Jounela S.-L., Poikonen R.; Vantaski N.; Rantala, "Evaluation of level control performance: methods, monitoring tool and applications in a flotation plant," *Minerals Engineering* 16, pp. 1069–1074, 2003. AutoCheck.
- [47] Q. S. J. B. T. A., "A survey of industrial model predictive control technology," *Contr. Eng. Prac.* 11, pp. 733–764, 2003. AutoCheck.
- [48] J. M., "Regelkreisüberwachung in der metallindustrie teil 2: Anwendungskonzept und fallstudie," *at - Automatisierungstechnik* 54, pp. 93–99, 2006. AutoCheck.
- [49] J. M. W. A. T. M. F. P. M. T. M. A. H. A., "How to get control systems working best: new ways to monitor and ensure peak control performance in steel processing," *METEC Congress Düsseldorf, Germany*, 2007. AutoCheck.
- [50] H. Suzuki, "Studies on the flow stress of metals and alloys," *Tokyo, March*, 1968. Awicco.
- [51] L. R. A. Ch., "Meßwerterfassungs- und -archivierungssystem an der warmbreitbandstraße der voest-alpine stahl linz gmbh," *Stahl und Eisen* 114 (3), 1994. Awicco.
- [52] H. H. N. K. P. M. T. G. S. W. R. J., "Camber measurement at the hot strip mill at voestalpine by using image processing method," *Electronic Imaging, San Jose, USA*, 2005. Awicco.
- [53] R. A. O. C. J. S. L. Breiman, J. H. Friedman, "Classification and regression trees," *Wadsworth Brooks/Cole Advanced Books Software, Pacific Grove, CA, USA*, 1984. Awicco.
- [54] Q. J. R., "Programs for machine learning," *Morgan Kaufmann Series in Machine Learning*, 1993. Awicco.
- [55] W. R. P. A. Irving, "The influence of process and chemical factors on surface and internal quality of continuously cast products," *Journées Siderurgiques ATS*, 1981. CastDesMon.
- [56] W. P. A., "Measurement of roll bending during continuous casting of slab," *AIME Steelmaking Proceedings, Dallas*, 1993. CastDesMon.
- [57] M. R. Ozgu, "Mould and strand guide instrumentation," *AIME Steelmaking Proceedings, Nashville*, 1995. CastDesMon.
- [58] A. M. L. F., "Optimisation of efficiency at flat steel production by means of surface inspection," *Stahl und Eisen* 121 (12), 2001. CastDesMon.
- [59] U. Cerabi P. Reizig, H. J.; Rudolphi, "On-line surface inspection of rolled strip," *MPT International* 4, 2000. CastDesMon.
- [60] R. R. T. S. A., "One year of experience with the generation of automatic hot mill inspection systems," *AISE Steel Technology*, 2000. CastDesMon.
- [61] S. L., "On-line slab surface inspection based on conoscopic holography," *SMEA Conference Proceedings, Sheffield*, 2002. CastDesMon.
- [62] K. S. H., "Integrated metal surface inspection system with high definition 3d and 2d defect detection and flat measurement capability," *Institute of materials conference, 'Instrumentation to innovation applications and developments in metal production and use'*, 2002. CastDesMon.
- [63] C. M. Y., "Material property prediction using neural-fuzzy network," in *Proc. 3rd World Congress on Intelligent Control and Automation, Hefei, China*, pp. 1092–1097, 2000. CastDesMon.
- [64] J. J. S. R., "Anfis: Adaptive-network-based fuzzy inference systems," *IEEE Trans. Systems, Man and Cybernetics Vol. 23* (3), pp. 665–685, 1993. CastDesMon.

- [65] A. R. Timienlinski and S. A., "Database mining - a performance perspective," *IEEE Trans. Knowledge and Data Engineering Vol. 5 (6)*, 1993. CastDesMon.
- [66] J. Demartines, P.; Herault, "Cuvilinear component analysis: a self-organising neural network for nonlinear mapping of data sets," *IEEE Trans. Neural Networks*, pp. 148–154, 1997. CastDesMon.
- [67] L. R. P., "Pattern classification using neural networks," *IEEE Communications Magazine Vol. 27*, pp. 47–64, 1989. CastDesMon.
- [68] S. M., "Automatic measurement of slab caster alignment using the sarclad strand condition monitor," in *Proceedings of a Workshop on Instrumentation Development in Continuous Casting, Institute of Materials, London*, 1996. CastDesMon.
- [69] N. S. S. Prahbu, "Use of the roll gap meter for machine maintenance at inlands no. 2 casters," *AIME Steelmaking Conference Proceedings, Chicacog, USA*, 1990. CastDesMon.
- [70] M. R. Ozgu, "Improvement of slab internal quality through enhanced caster maintenance at sparrows point," *AIME Steelmaking Conference Proceedings, Chicago, USA*, 1994. CastDesMon.
- [71] B. R. B. N. D. M. C. R. B. A. D. B., "Recent developments in caster instrumentation in bhp slab and bloom caster," *13th Process Technology Development Conference, Nashville, Vol. 13*, 1995. CastDesMon.
- [72] G. A. S. K. B. J. K., "Heat flow, gap formation and breakouts in the continuous casting of steel," *Met. Trans. B Vol. 7(B)*, 1976. CastDesMon.
- [73] T. B. S. I. B. J. K., "Comparison of numerical modelling techniques for complex two-dimensional, transient heat conducting problems," *Met. Trans. B. Vol. 15(B)*, 1984. CastDesMon.
- [74] T. B. S. I. V. B. J. K., "Mathematical model of the thermal processing of steel ingots - part ii," *Met. Trans. B Vol. 18(B)*, 1987. CastDesMon.
- [75] H. Kozlowski, P. F.; Thomas B. G.; Azzi J. A.; Wang, "Simple constitutive equations for steel at high temperature," *Met. Trans. A Vol 23(A)*, pp. 903–917, 1992. CastDesMon.
- [76] R. M. R. T. B. G. L. G. D. F. D., "Taper optimisation of a round billet mould," *ATS Journées Siderurgique Internationnales*, 1993. CastDesMon.
- [77] N. T. U. T. M. J., "Deformation behaviour during solidification of steel," *ISIJ Int. Vol. 35 (6)*, 1995. CastDesMon.
- [78] M. R. S. A. . C. R. Cristallini, A; Ridolfi, "Advanced process modelling of csp funnel design for thin slab casting of high alloyed steels," *12th IAS Steelmaking Seminar and 2nd and ISS Argentina Section Meeting, Buenos Aires, Argentina*, 2001. CastDesMon.
- [79] M. R. Ridolfi, "Finite element modelling applied to steel solidification in continuous casting moulds," *3rd European Conference on Continuous Casting*, 1998. CastDesMon.
- [80] M. R. D. S. M. Ridolfi, "Influence of steel fluid-dynamics on the shell growth and stress history in a cc mould," *ATS Journées Siderurgique Internationnales*, 1999. CastDesMon.
- [81] S. D. H. P., "Mtm-mould thermal monitoring," in *Proc. 79th ISS-AIME Steelmaking Conference, Pittsburgh, USA*, pp. 207–216, 1996. CastDesMon.
- [82] H. M. P. D., "Diagnostic aids for quality improvement and maintenance in continuous casters," *Iron and Steel Engineer*, 1998. CastDesMon.
- [83] B. Patrick B.; Barber, "Practical aspects of the design, operation and perfomance of caster spray systems," *La Revue de Métallurgie - CIT*, 2001. CastDesMon.
- [84] P. R., "Plant condition monitoring as contribution of quality-assurance," *Stahl und Eisen Vol. 4*, 1993. CastDesMon.
- [85] H. Goto N.; Onishi, "Development of machine diagnosis techniques in continuous caster," *Kawasaki Steel Giho Vol. 22(2)*, 1990. CastDesMon.
- [86] W. Y. D. Y. M. Cozijnsen, "Strip shape analysis in cold rolling," in *44th Mechanical Working and Steel Processing Conference Proceedings, Orlando, FL, USA*, 2002. CEFLA.

- [87] A. J. C., *Advances in Model-based Predictive Control*, ch. On min-max model-based predictive control. Oxford University Press, 1994. CEFLA.
- [88] B. G. F., “Automation of tandem mills,” *The Iron and Steel Institute, London*, 1973. CEFLA.
- [89] C. E. B. C., *Model predictive control*. Springer, 1999. CEFLA.
- [90] C. R. E. W. J. T. P.J., “An advanced model for flatness and profile prediction in hot rolling,” *AISE Year Book*, pp. 429–439, 1991. CEFLA.
- [91] P. M. W. Gill, *Numerical methods for constrained optimization*. Academic Press, 1974. CEFLA.
- [92] G. W.B., *Steel Rolling Technology: Theory and Practice*. Marcel Dekker, 1989. CEFLA.
- [93] J. M., “Explicit models of thickness profile and tension stress distribution applications,” *Steel Research 6+7*, 2000. CEFLA.
- [94] J. M. M. M. W. A. U. W. T. G., “Advanced measurement and flatness control for hot strip mills,” *La Revue de Métallurgie-CIT*, pp. 517–522, 2002. CEFLA.
- [95] K. M. R. J. M. A., “Predictive control design for large scale systems,” *Preprints IFAC Symp. Integrated Systems Engineering, Baden-Baden, Germany*, 1994. CEFLA.
- [96] L. L., *System identification: Theory for the User*. Prentice Hall, 1999. CEFLA.