

*JFE Steel has developed a new process control technology using locally weighted regression model, a type of Just-In-Time modeling. Just-In-Time modeling is the following method: A large volume of past input and output data is accumulated, and a local prediction model is constructed by prioritizing the past data near the query point each time a prediction is required. This technology can improve the quality control accuracy significantly, and has been used in various manufacturing processes and in various steel works in JFE Steel. This paper discusses the outline of this technology and examples in commercial plants.*

## 1. Introduction

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tqpo gpcn" ejcpigu" ogpvkqpgf" cdqxs." jcu" dggp" fgocpfgf<sup>3+0</sup>

Kp" c" uvgn" yqtmu." c" nctig" pwodgt" qh" eqo rwvgtu" ctg" wugf" vq" qrgtcvg" xctkqu" ocpwhcevwtkpi" gswkr" ogpv." cpf" cwvq" ocvkqp" d{" eqo rwvgtk|cvkqp" vq" ko rtqxs" ncdqt" rtqfwe/ vkxkv{" jcu" c" nqpi" jkuvt{0" Vjg" xqno" g" qh" uqhvyctg" jcu" kpetgcugf" tcrkfn{" ukpeg" vjg" 3; :2u." cpf" ceeq" rcp{kp" i" vjku." vjg" pwodgt" qh" rtqegu" oqfgnu" ko ring" ogpv" vq" rgt/ hqt" o" hggfhqyctf" eqpvtqn" cpf" qrvk" ok|cvkqp" jcu" cnuq" itqyp" ftc" ocvkenn{0" Dgecwug" vjg" kpetgcug" qh" oqfgn" ockpvpcpeg" nqcf" jcu" pqy" dgeqog" c" rtqdnog." uk" o wncv/ pgqwun{" ykvj" vjg" fgxgnqr" ogpv" qh" cfxcppegf" eqpvtqn" vgej/ ppqni" kgu." vjg" pgeguuct{" qh" vgejpkenn" fgxgnqr" ogpv" vq" tgfweg" vjg" ockpvpcpeg" nqcf" ku" cnuq" kpetgcukpi<sup>3+0</sup>

Ykvj" rtqitguu" kp" eqo rwvgt" vgejppqni {" nctig" xqno" ogu" qh" ocpwhcevwtkpi" tguwvu" ctg" pqy" eqnngevgf" kp" fcvdcugu" cv" ocp{" ukvku" kp" ocpwhcevwtkpi" kpfwvutku" hqt" swcnkv{" eqpvtqn" cpf" qrgtcvkqpcn" ko rtqxs" ogpv<sup>0</sup> Vjg" vgejpkswg" ecnngf" Lwuv/Kp/Vk" og" oqfgnkpi<sup>4.5+</sup> jcu" cvtcevgf" eqpukfgt/ cdng" kpvgtguv" kp" tgegpv" {gctu" cu" c" vgejppqni {" kp" yjkej" oqtg" rtgekug" oqfgnu" ctg" eqpuvtwevgf" d{" ghggevksxg" wvknk|c/ vkqp" qh" vjcv" fcvcl" Lwuv/Kp/Vk" og" oqfgnkpi" ku" c" ogvj" qf" kp" yjkej" vjg" xcnwgu" qh" oqfgn" rctc" ogvgtu" ctg" pqv" urgekkgf" kp" cfxcppeg." dwv" c" nctig" xqno" g" qh" rcuv" kprwv" cpf" qvrvwv" fcv" ku" eqnngevgf." cpf" c" nqecn" rtgfkevqp" oqfgnu" ku" eqp/ uvtwevgf" d{" rtkqtkv|kpi" vjg" rcuv" fcv" pgct" vjg" swgt {" rkp" v" v" vk" og" c" rtgfkevqp" ku" tgswtg<sup>3+0</sup>

Vjku" rcrgt" fkuwuugu" tgugetej" kp" eqppgevqp" ykvj"













