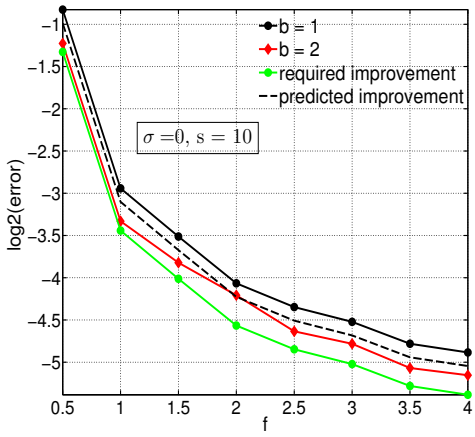
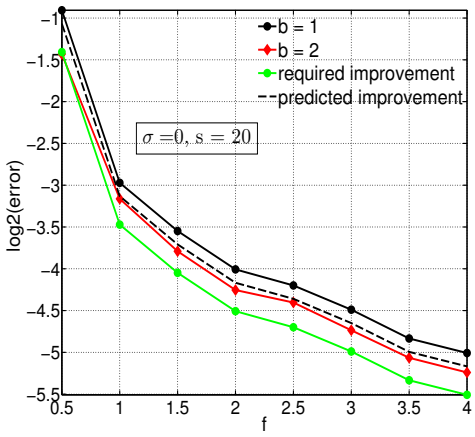
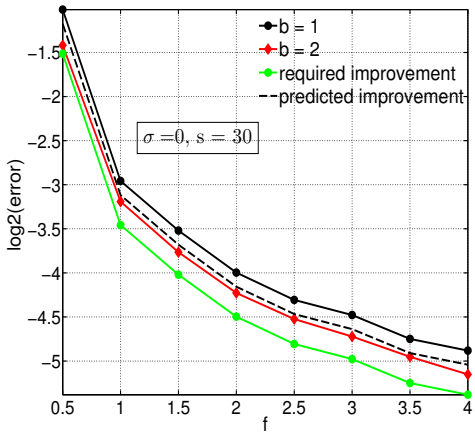
Supplement to 'b-bit Marginal Regression': full set of experimental results

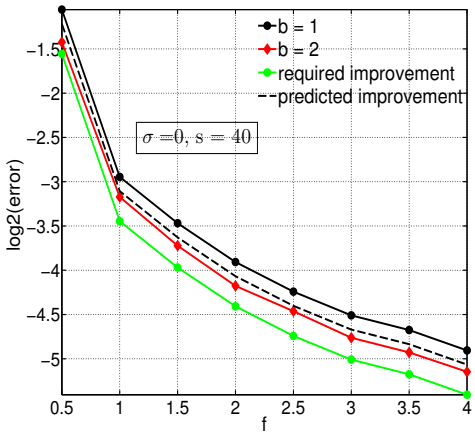
Empirical verification of the analysis of Section 3

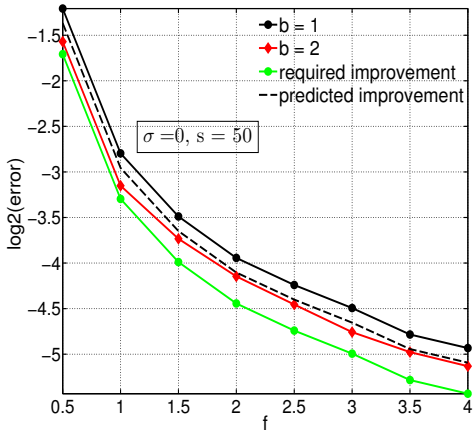
$\sigma = 0$



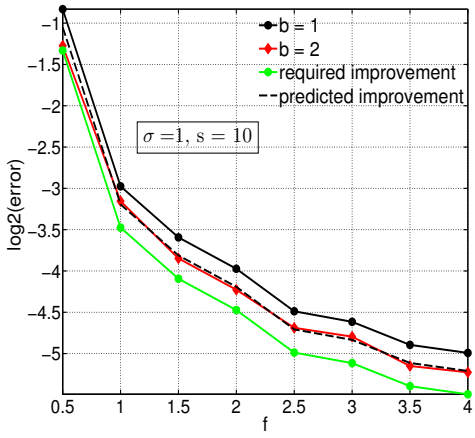


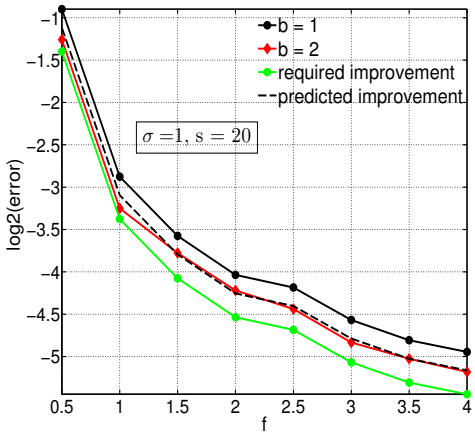


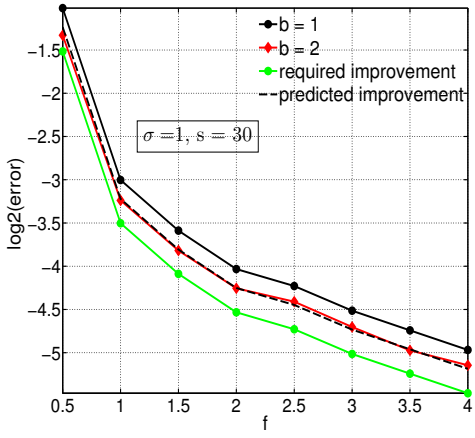


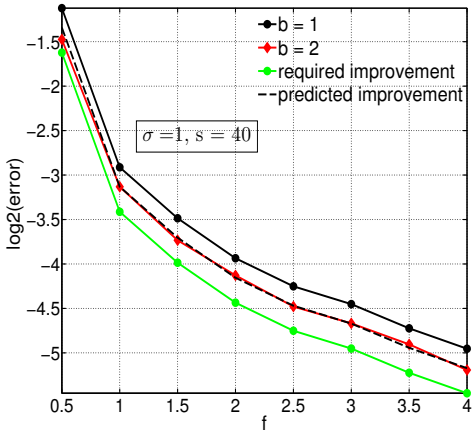


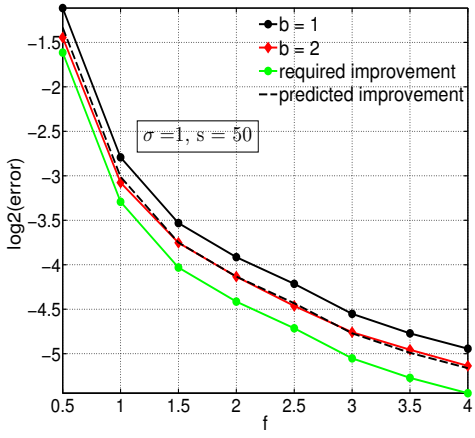
$\sigma = 1$


b = 1
b = 2
required improvement
predicted improvement
σ =1, s = 10
log2(error)
f

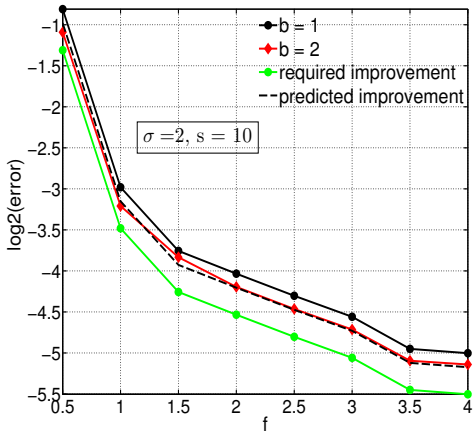

b = 1
b = 2
required improvement
predicted improvement
σ =1, s = 20
log2(error)
f

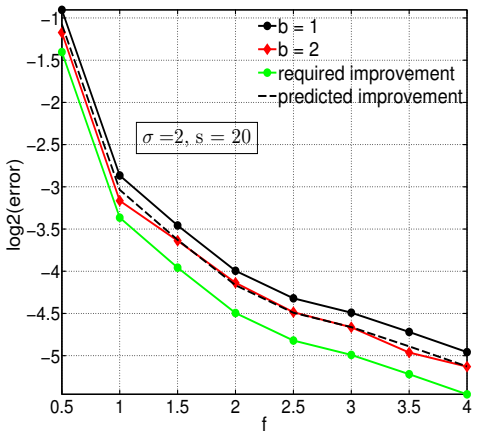

b = 1
b = 2
required improvement
predicted improvement
σ =1, s = 30
log2(error)
f


b = 1
b = 2
required improvement
predicted improvement
σ =1, s = 40
log2(error)
f


b = 1
b = 2
required improvement
predicted improvement
σ =1, s = 50
log2(error)
f

$\sigma = 2$


b = 1
b = 2
required improvement
predicted improvement
σ =2, s = 10
log2(error)
f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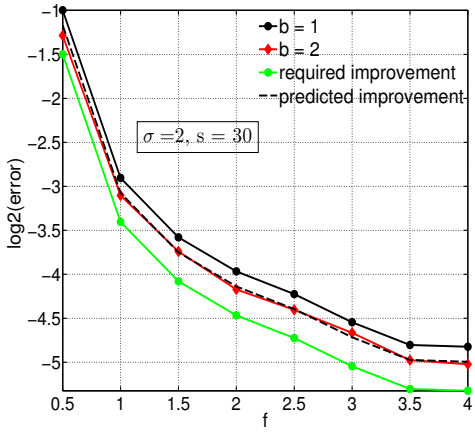
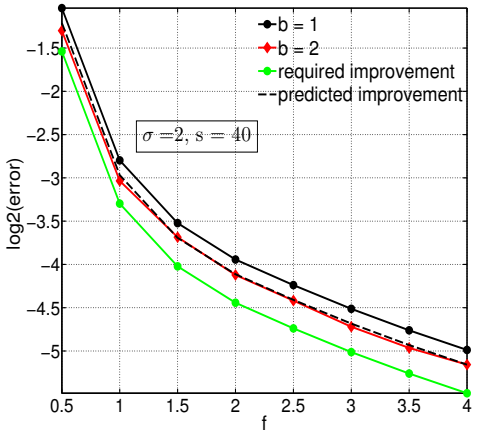
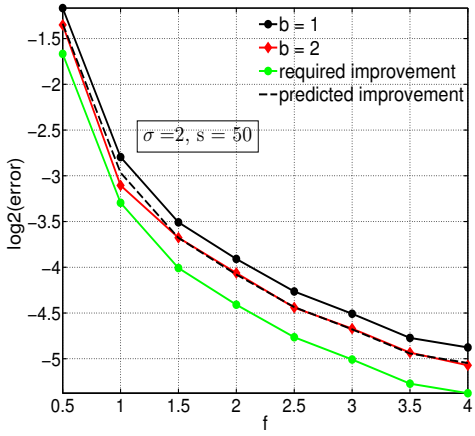
b = 2
required improvement
predicted improvement
σ =2, s = 20
log2(error)
f

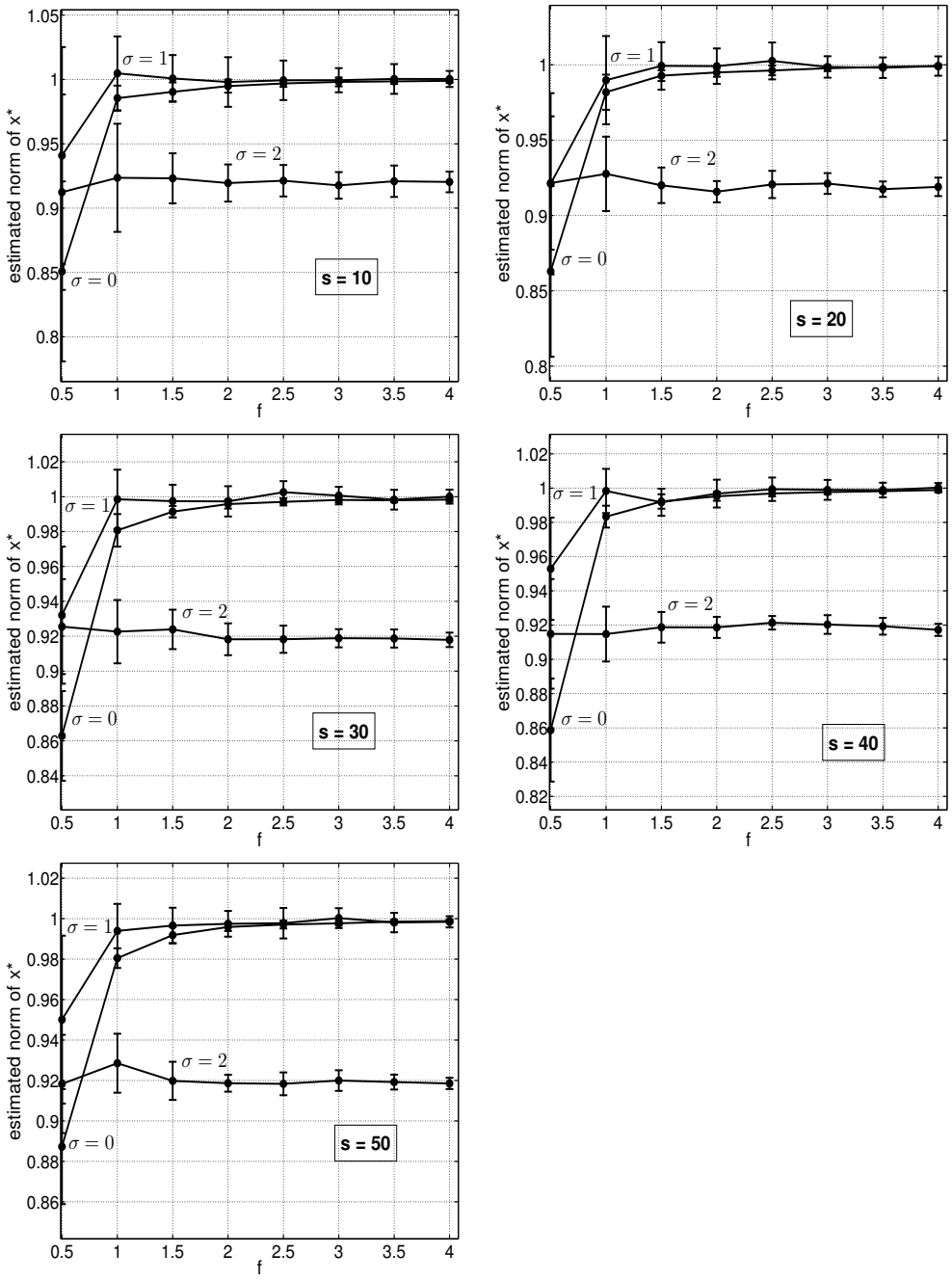

b = 1
b = 2
required improvement
predicted improvement
σ =2, s = 30
log2(error)
f


b = 1
b = 2
required improvement
predicted improvement
σ =2, s = 40
log2(error)
f

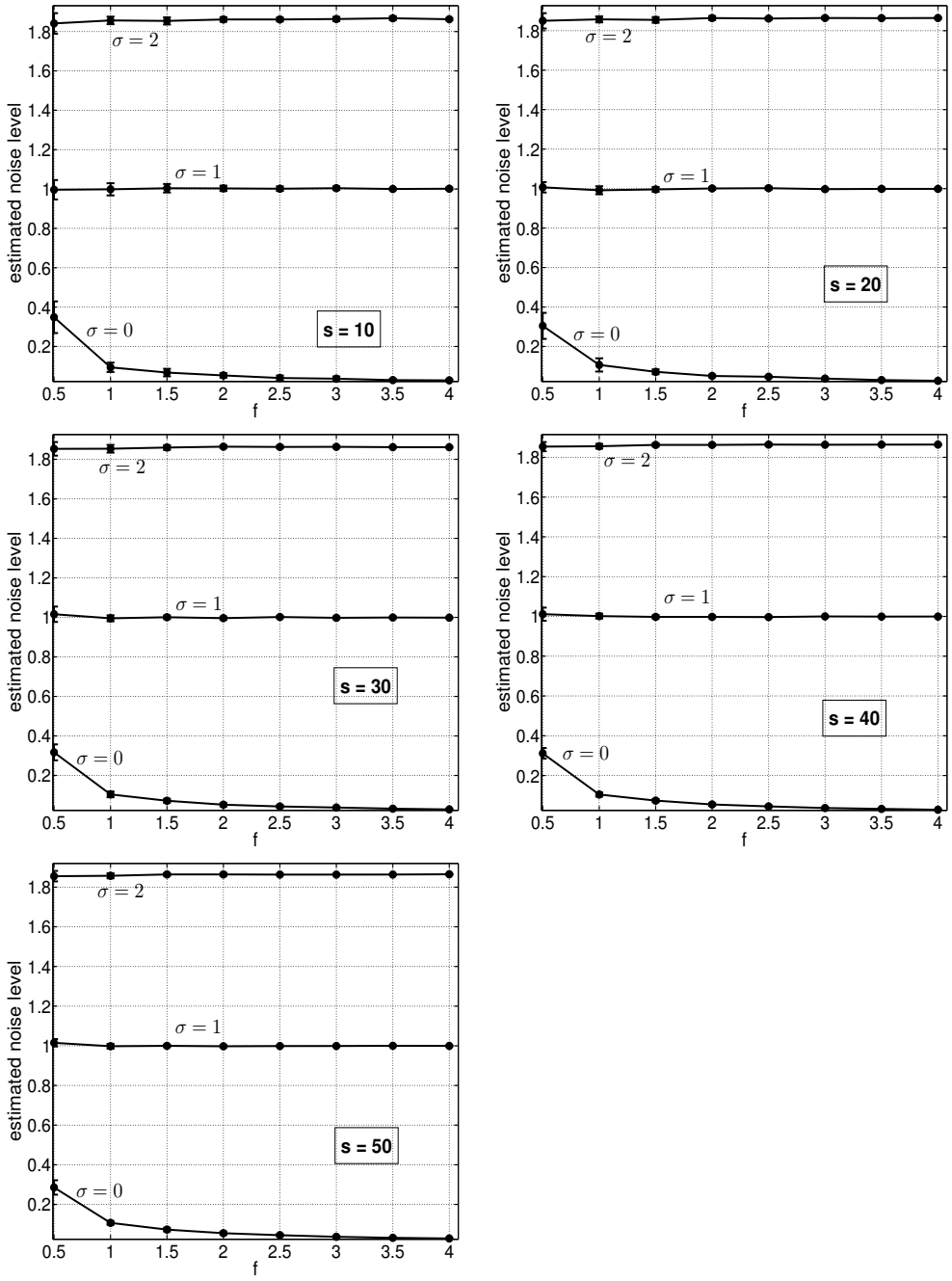

b = 1
b = 2
required improvement
predicted improvement
σ =2, s = 50
log2(error)
f

Estimation of the scale and the noise level

Estimation of the scale parameter

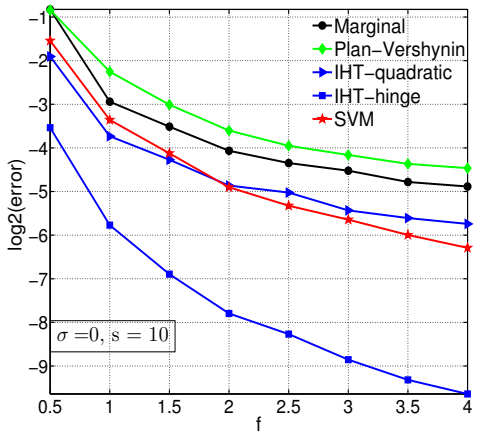


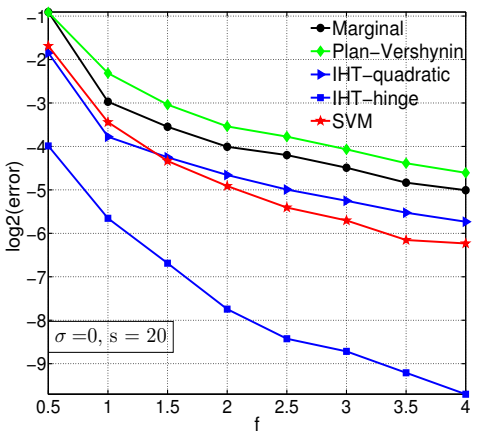
Estimation of the noise level

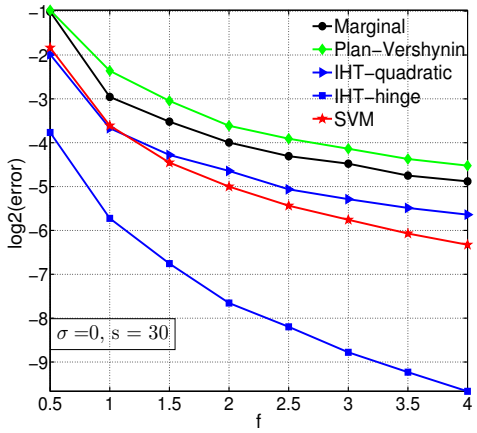


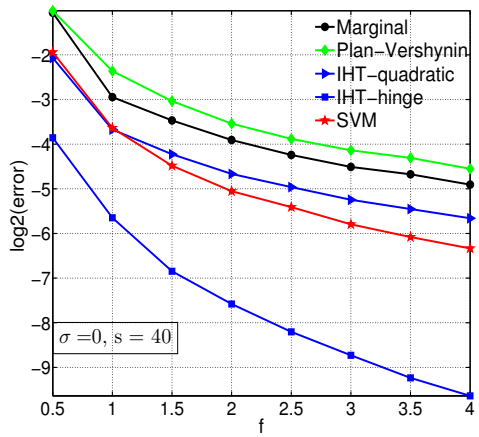
b-bit Marginal Regression and alternative recovery algorithms

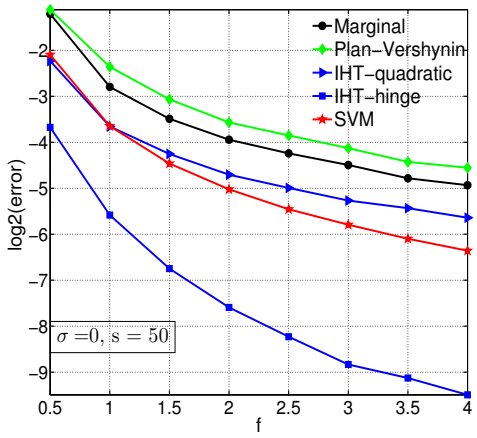
$b = 1$, $\sigma = 0$



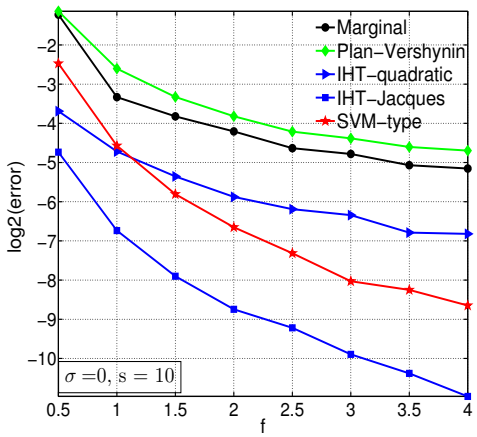


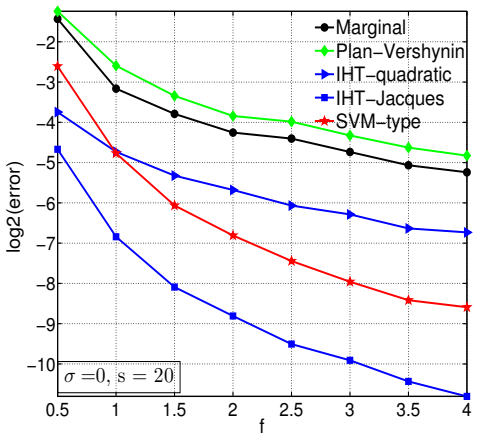


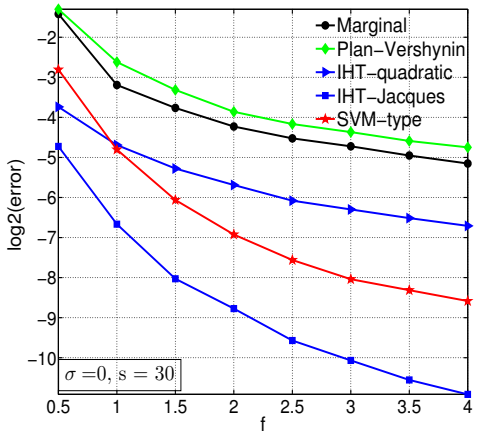


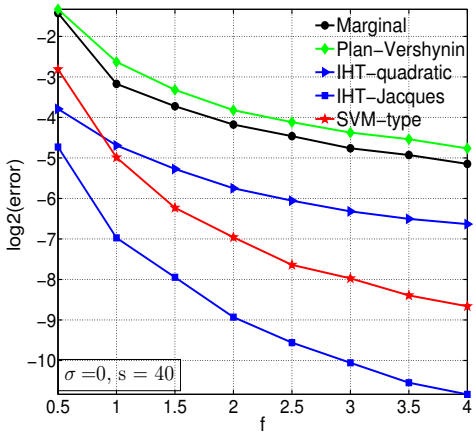


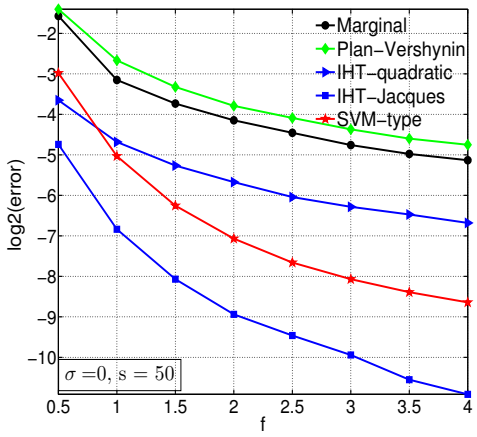
$b = 2$, $\sigma = 0$


Marginal
Plan−Vershynin
IHT−quadratic
IHT−Jacques
SVM−type
log2(error)
f
σ =0, s = 10

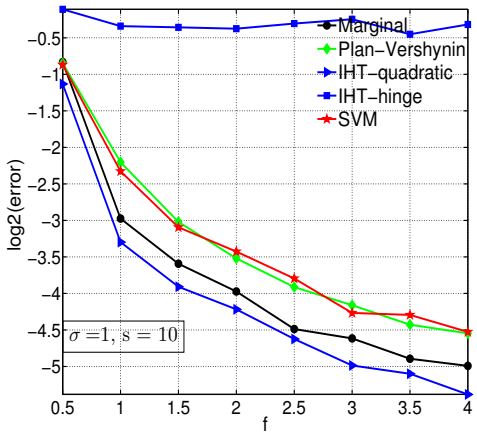

Marginal
Plan−Vershynin
IHT−quadratic
IHT−Jacques
SVM−type
log2(error)
f
σ =0, s = 20

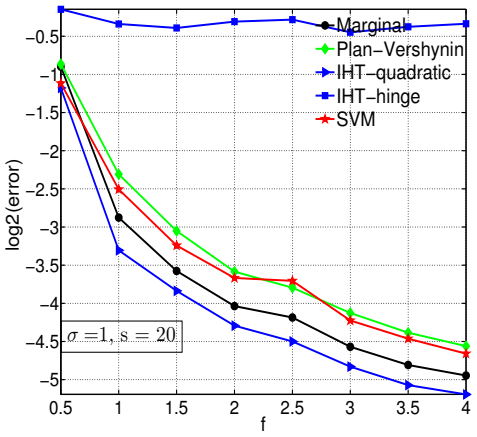

Marginal
Plan−Vershynin
IHT−quadratic
IHT−Jacques
SVM−type
log2(error)
f
σ =0, s = 30

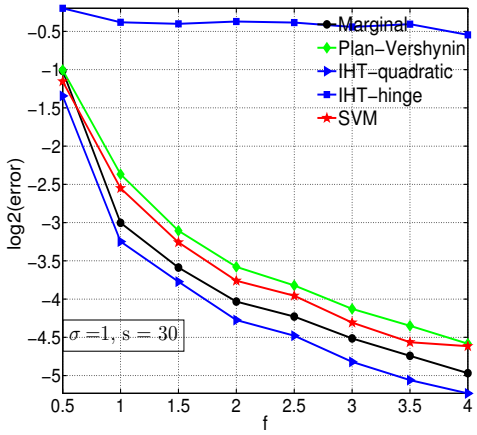

Marginal
Plan−Vershynin
IHT−quadratic
IHT−Jacques
SVM−type
log2(error)
f
σ =0, s = 40

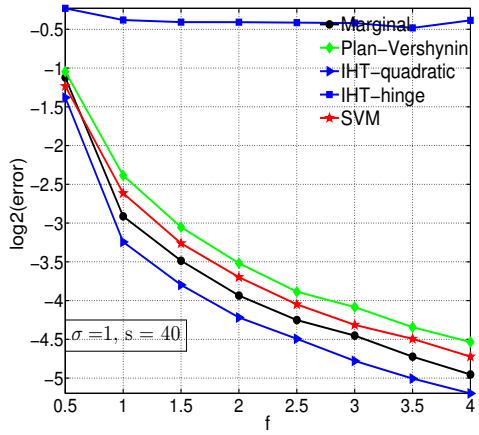

Marginal
Plan−Vershynin
IHT−quadratic
IHT−Jacques
SVM−type
log2(error)
f
σ =0, s = 50

$b = 1$, $\sigma = 1$


Marginal
Plan−Vershynin
IHT−quadratic
IHT−hinge
SVM
log2(error)
f
σ =1, s = 10


Marginal
Plan−Vershynin
IHT−quadratic
IHT−hinge
SVM
log2(error)
f
σ =1, s = 20


Marginal
Plan−Vershynin
IHT−quadratic
IHT−hinge
SVM
log2(error)
f
σ =1, s = 30


Marginal
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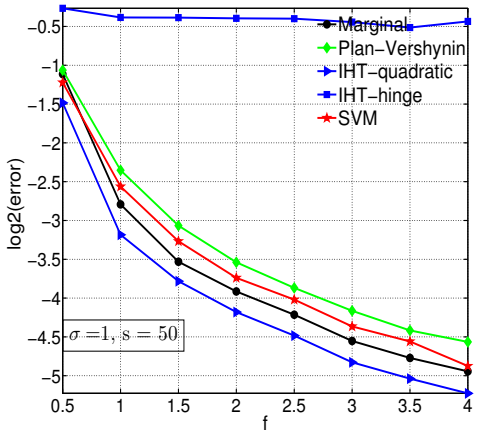
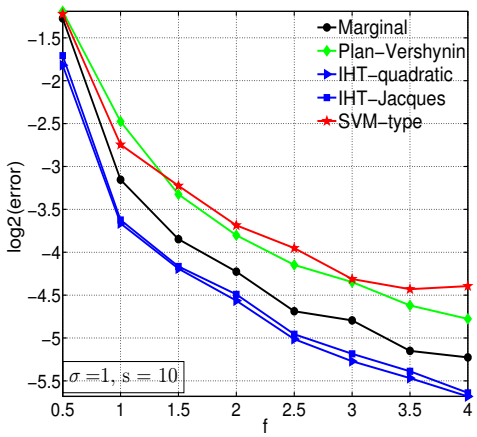
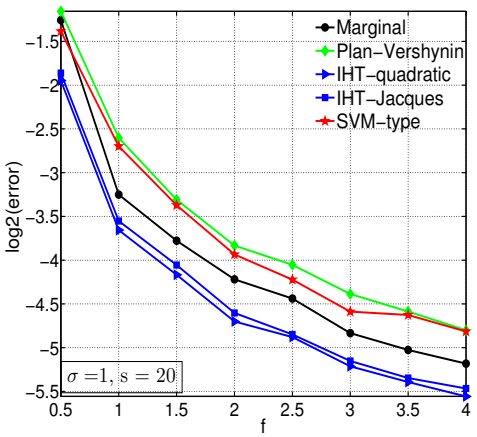
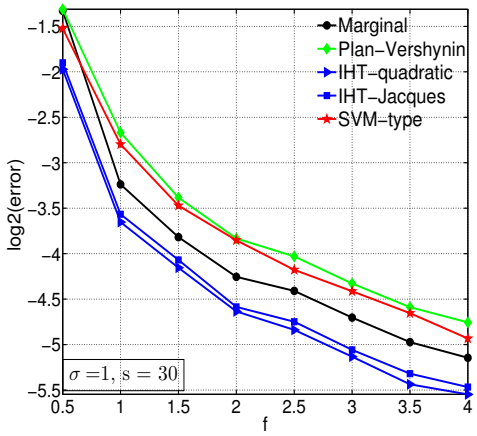
IHT−quadratic
IHT−hinge
SVM
log2(error)
f
σ =1, s = 40

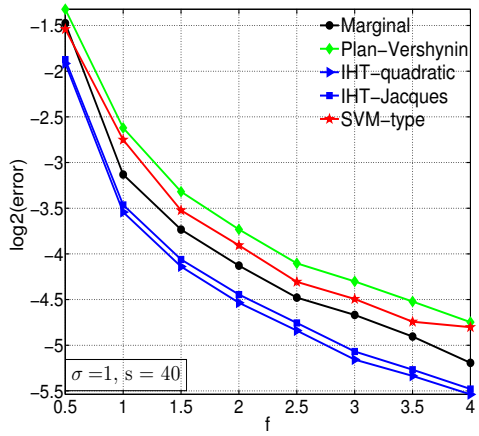

Marginal
Plan−Vershynin
IHT−quadratic
IHT−hinge
SVM
log2(error)
f
σ =1, s = 50

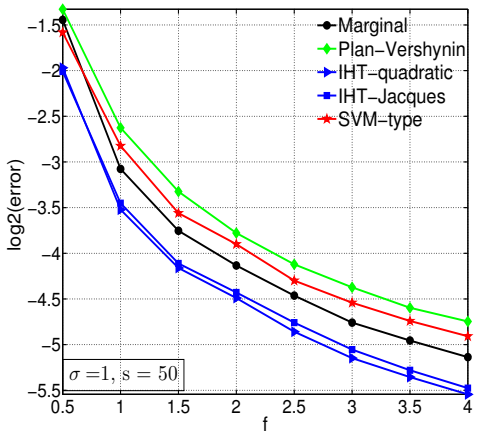
$b = 2$, $\sigma = 1$


Marginal
Plan−Vershynin
IHT−quadratic
IHT−Jacques
SVM−type
log2(error)
f
σ =1, s = 10


Marginal
Plan−Vershynin
IHT−quadratic
IHT−Jacques
SVM−type
log2(error)
f
σ =1, s = 20


Marginal
Plan−Vershynin
IHT−quadratic
IHT−Jacques
SVM−type
log2(error)
f
σ =1, s = 30


Marginal
Plan−Vershynin
IHT−quadratic
IHT−Jacques
SVM−type
log2(error)
f
σ =1, s = 40


Marginal
Plan−Vershynin
IHT−quadratic
IHT−Jacques
SVM−type
log2(error)
f
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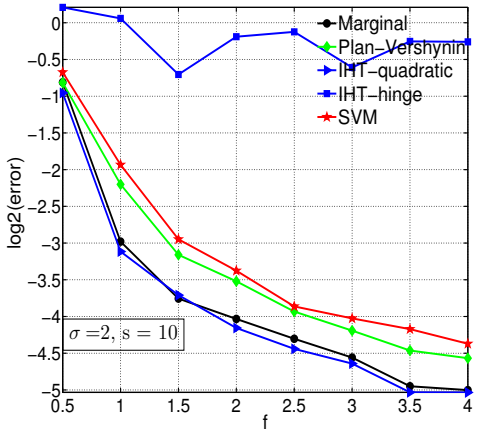
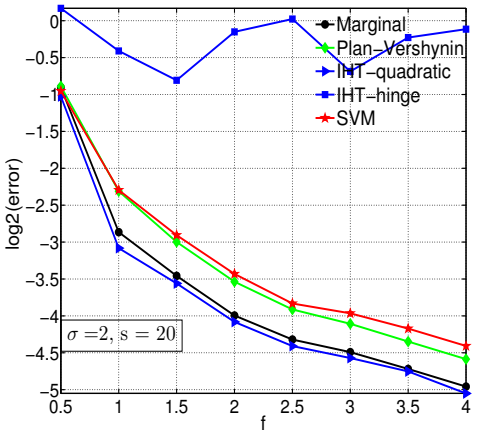
$b = 1$, $\sigma = 2$


Marginal
Plan−Vershynin
IHT−quadratic
IHT−hinge
SVM
log2(error)
f
σ =2, s = 10


Marginal
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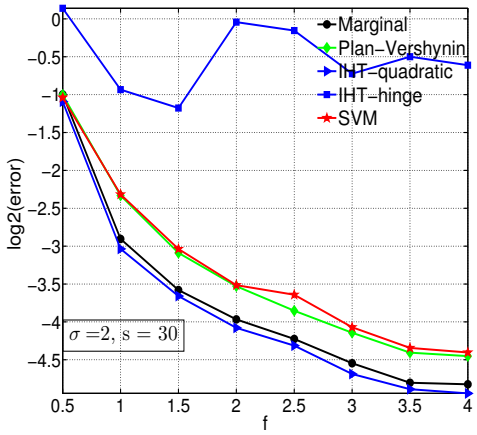
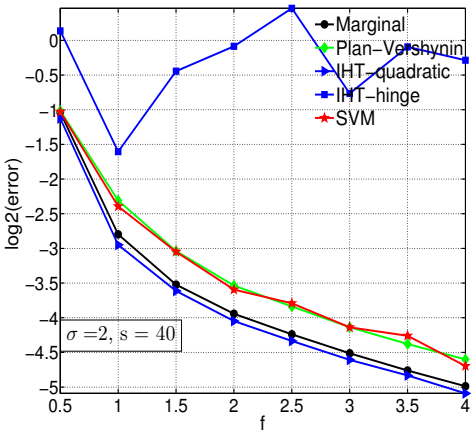
IHT−quadratic
IHT−hinge
SVM
log2(error)
f
σ =2, s = 20


Marginal
Plan−Vershynin
IHT−quadratic
IHT−hinge
SVM
log2(error)
f
σ =2, s = 30


Marginal
Plan−Vershynin
IHT−quadratic
IHT−hinge
SVM
log2(error)
f
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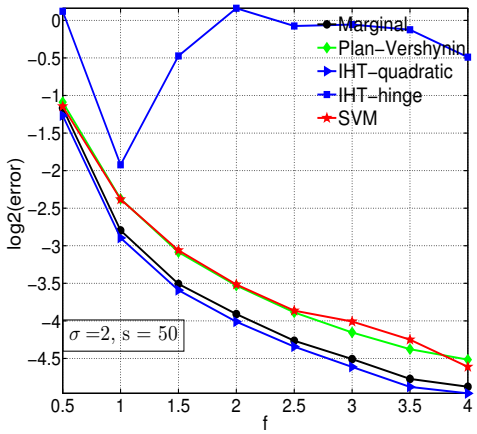
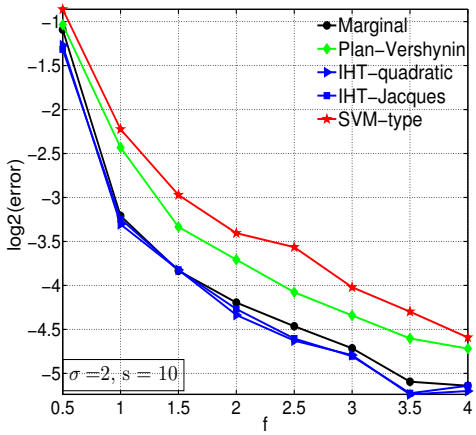
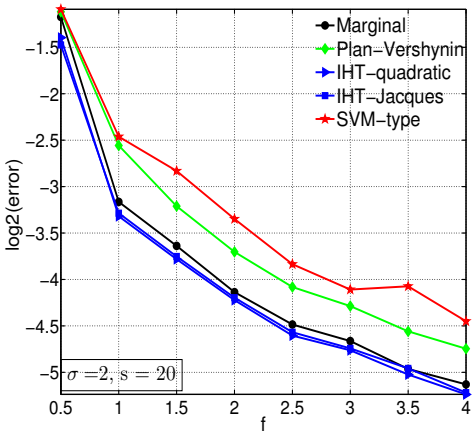
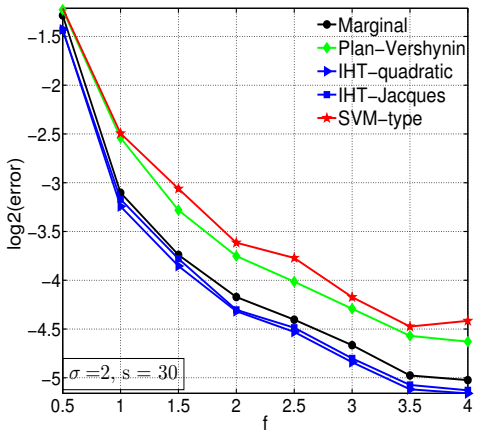
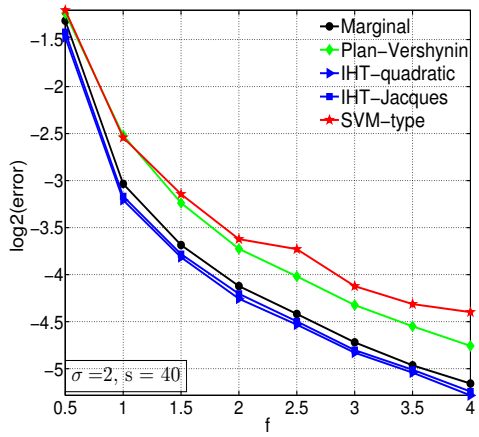

Marginal
Plan−Vershynin
IHT−quadratic
IHT−hinge
SVM
log2(error)
f
σ =2, s = 50

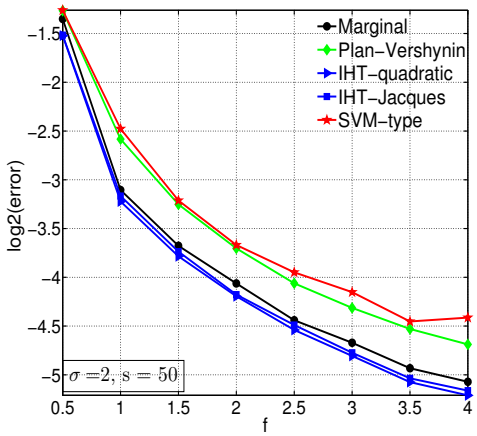
$b = 2$, $\sigma = 2$


Marginal
Plan−Vershynin
IHT−quadratic
IHT−Jacques
SVM−type
log2(error)
f
σ =2, s = 10


Marginal
Plan−Vershynin
IHT−quadratic
IHT−Jacques
SVM−type
log2(error)
f
σ =2, s = 20


Marginal
Plan−Vershynin
IHT−quadratic
IHT−Jacques
SVM−type
log2(error)
f
σ =2, s = 30


Marginal
Plan−Vershynin
IHT−quadratic
IHT−Jacques
SVM−type
log2(error)
f
σ =2, s = 40


Marginal
Plan−Vershynin
IHT−quadratic
IHT−Jacques
SVM−type
log2(error)
f
σ =2, s = 50