AOU vs dFe

Mariko Hatta & Maxime Grand

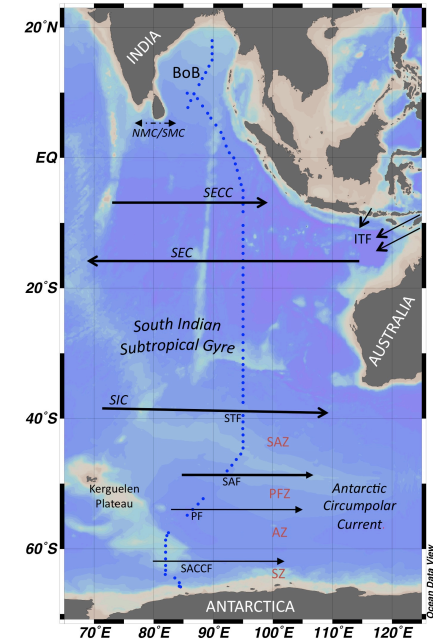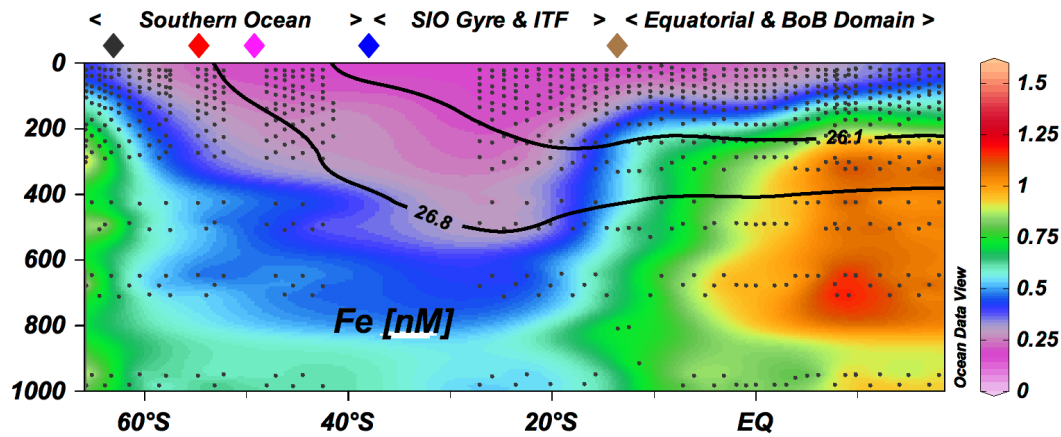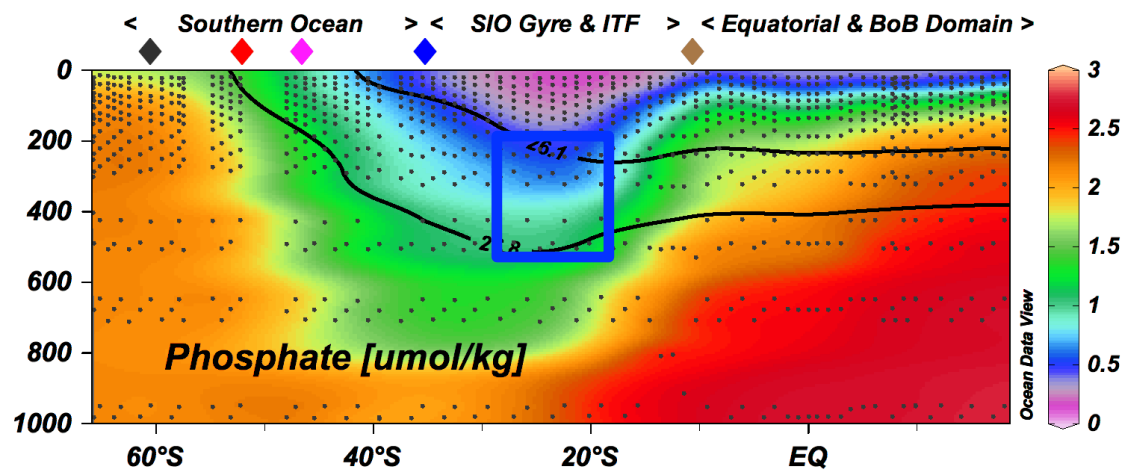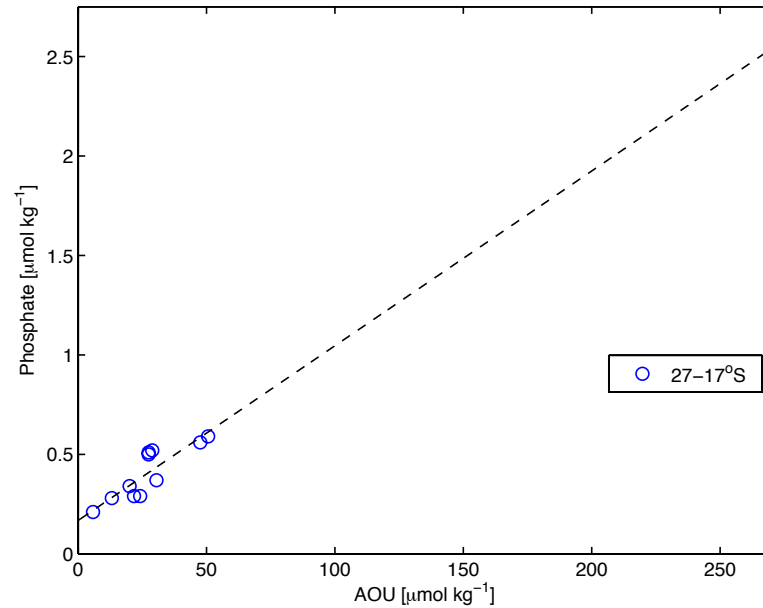University of Hawaii, University of Southampton

Regeneration in Indian Central Water

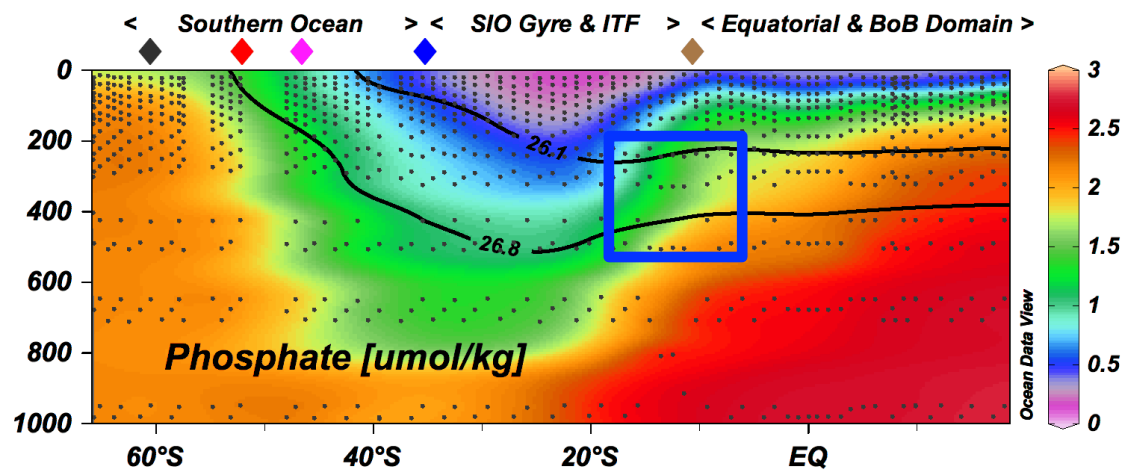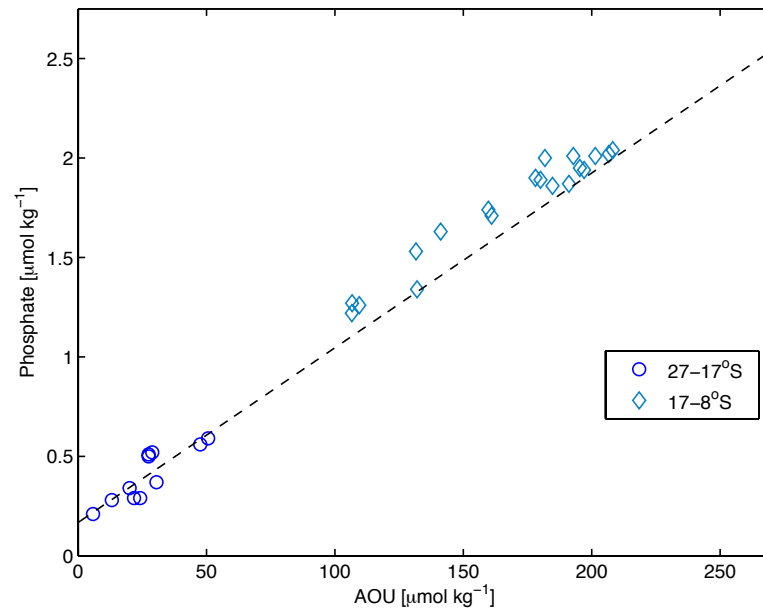Southern Ocean | SIO Gyre & ITF | Equatorial & BoB Domain

Fe [nM]

Subduction region

Fe Enrichment →

σ₀= 26.1

σ₀= 26.8

Scavenging

$$[Fe]_{subsurface}=[Fe]_{preformed}+[Fe]_{remineralized}-[Fe]_{scavenged}$$
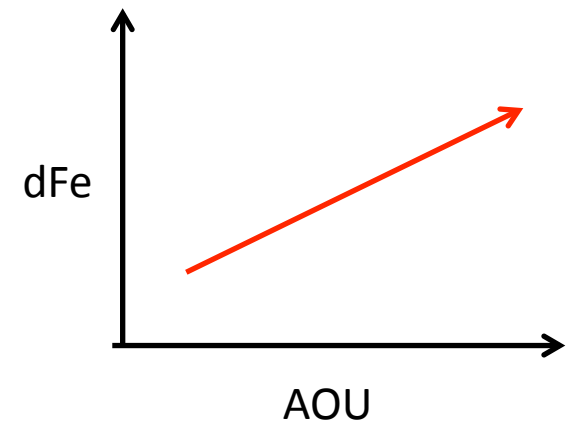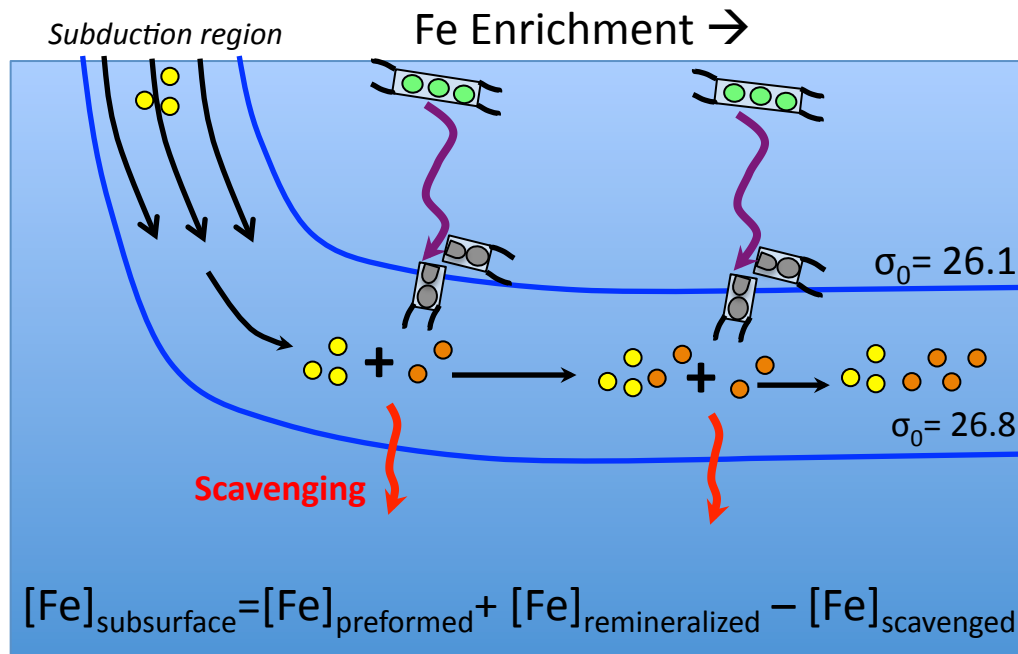
Subtropical Front ~40°S ──────→ Bay of Bengal

dFe

AOU

Regeneration in Indian Central Water

Regeneration in Indian Central Water

Regeneration in Indian Central Water

Regeneration in Indian Central Water

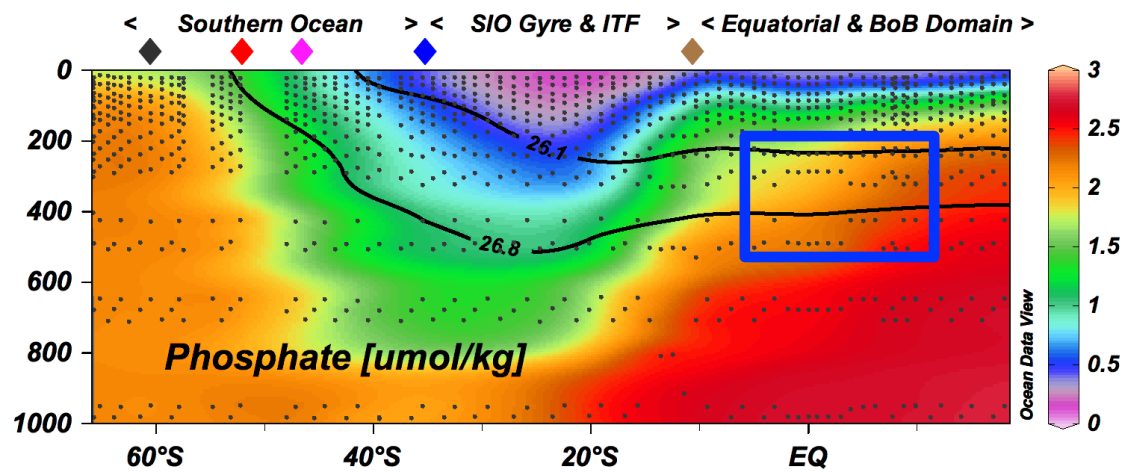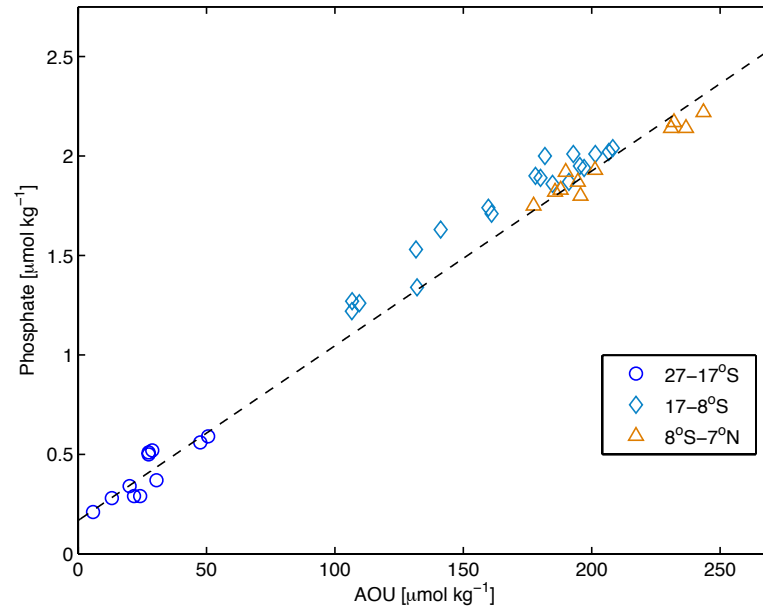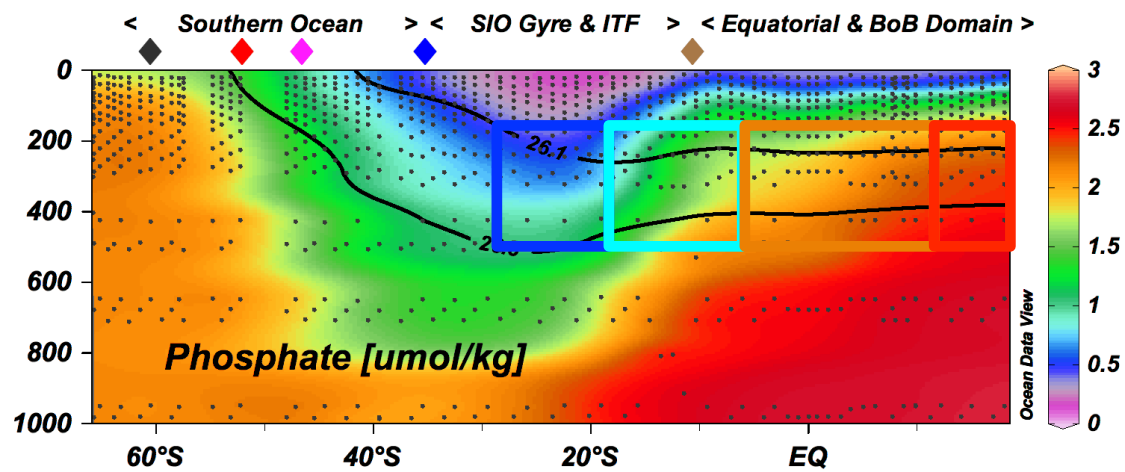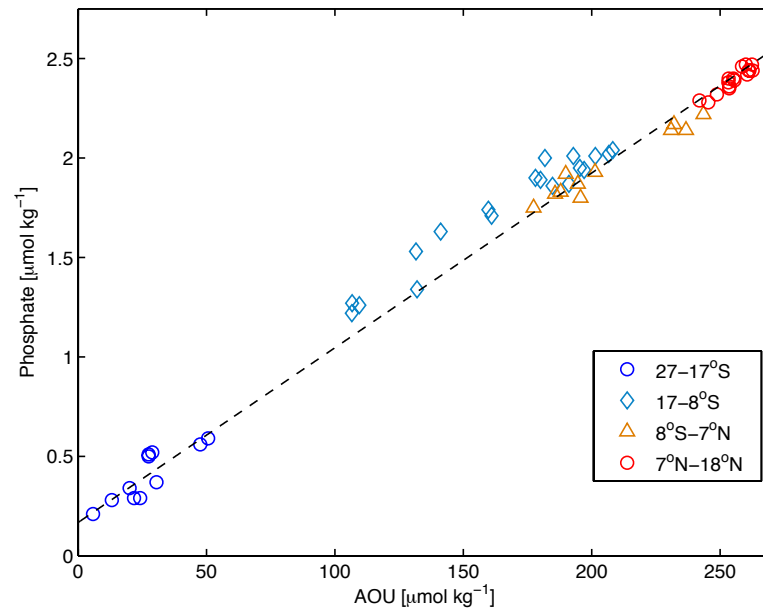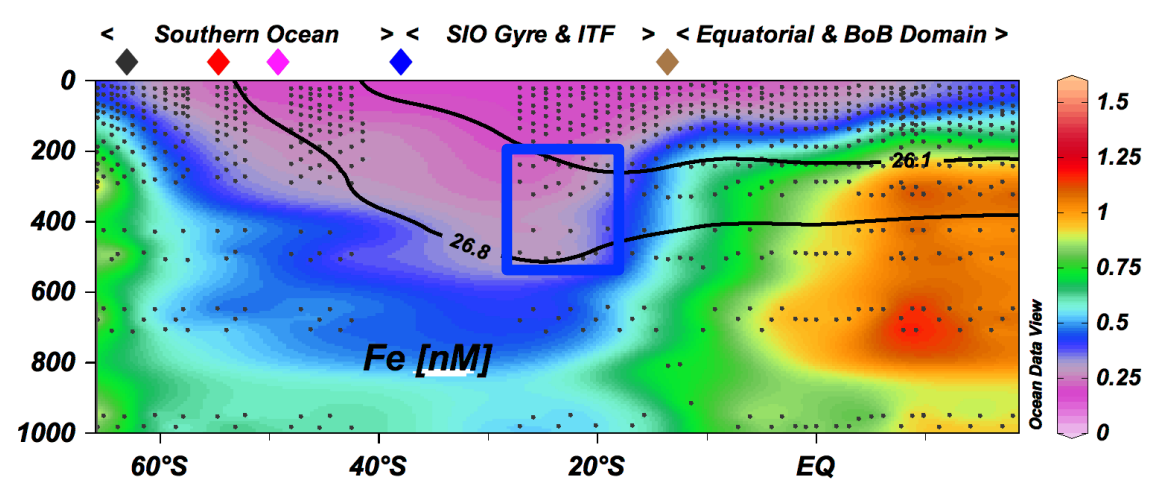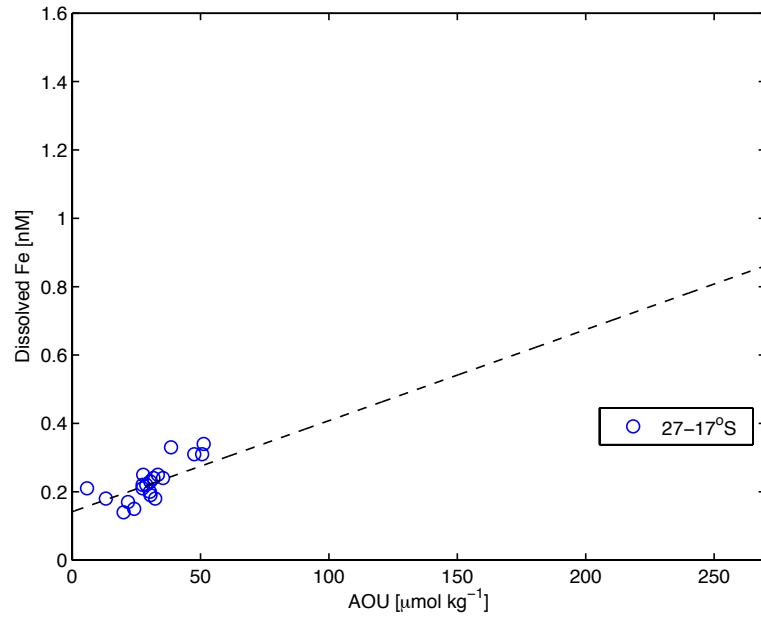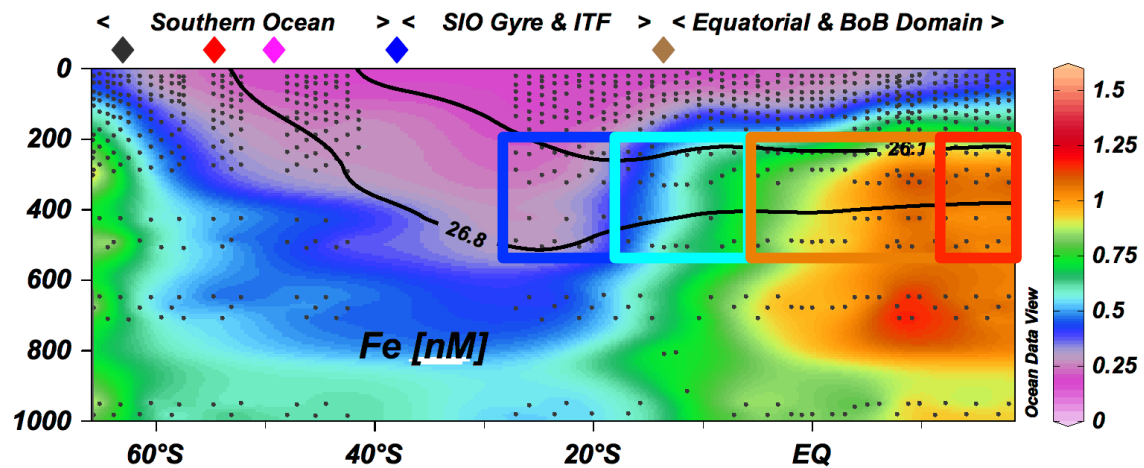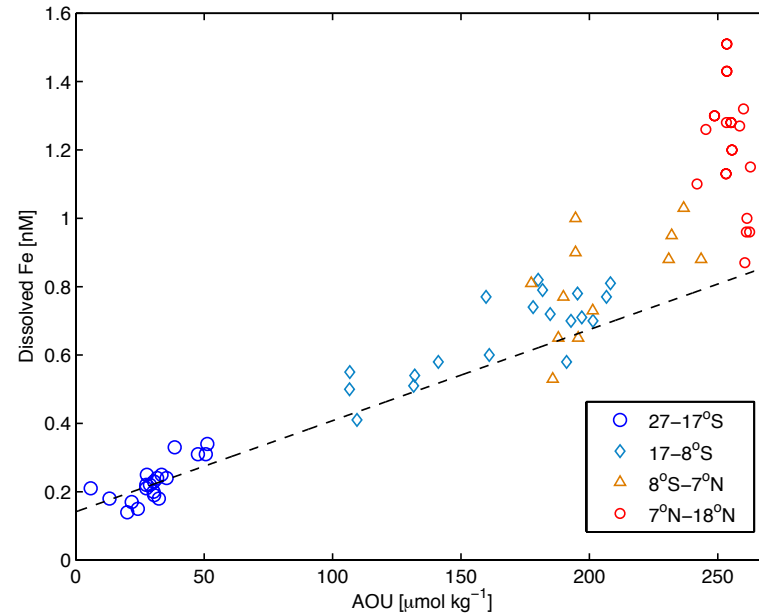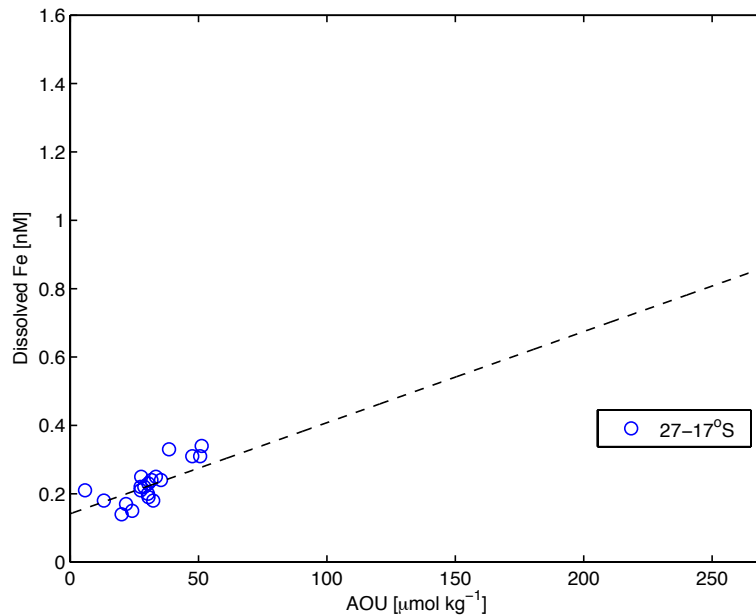# Regeneration in Indian Central Water

Regeneration in Indian Central Water

Regeneration in Indian Central Water

Fe:AOU= 2.7±0.8 µmol mol^{-1}

AOU:DIC = 1.5

→**Fe:C = 4.1 ± 1.5 µmol mol^{-1}**
in Indian Central Water

Net regeneration rate

GA03
100-400m (no GT10-09&-10)

$y = 0.0056x + 0.1411$
$R^2 = 0.86054$

100-400m, 43S-40N

- ● GEO_GA03
- ○ CLIVAR A16N N. Atlantic O
- △ CLIVAR A16S S. Atlantic O
- × CLIVAR I5 S. Indian O
- × CLIVAR P02 N. Pacific O

GA03
100-400m (no GT10-09&-10)

$y = 0.0056x + 0.1411$
$R^2 = 0.86054$

100-400m, 43S-40N
● GEO_GA03
○ CLIVAR A16N   N. Atlantic O
△ CLIVAR A16S   S. Atlantic O
× CLIVAR I5   S. Indian O
× CLIVAR P02   N. Pacific O

GA03
100-400m (no GT10-09&-10)

y = 0.0056x + 0.1411
R² = 0.86054

100-400m, 43S-40N
● GEO_GA03
○ CLIVAR A16N   N. Atlantic O
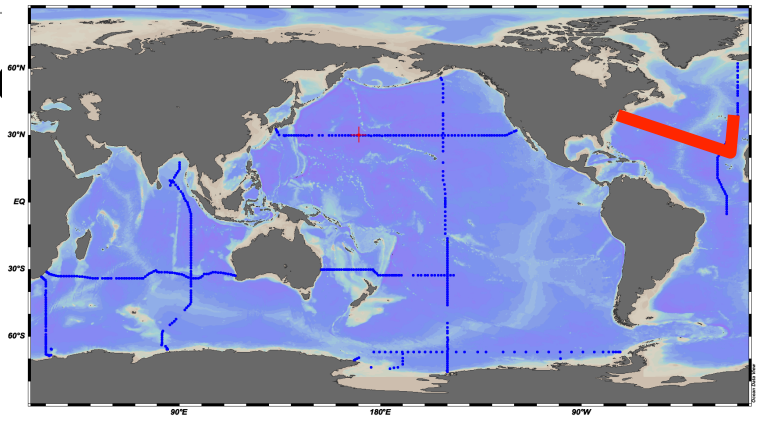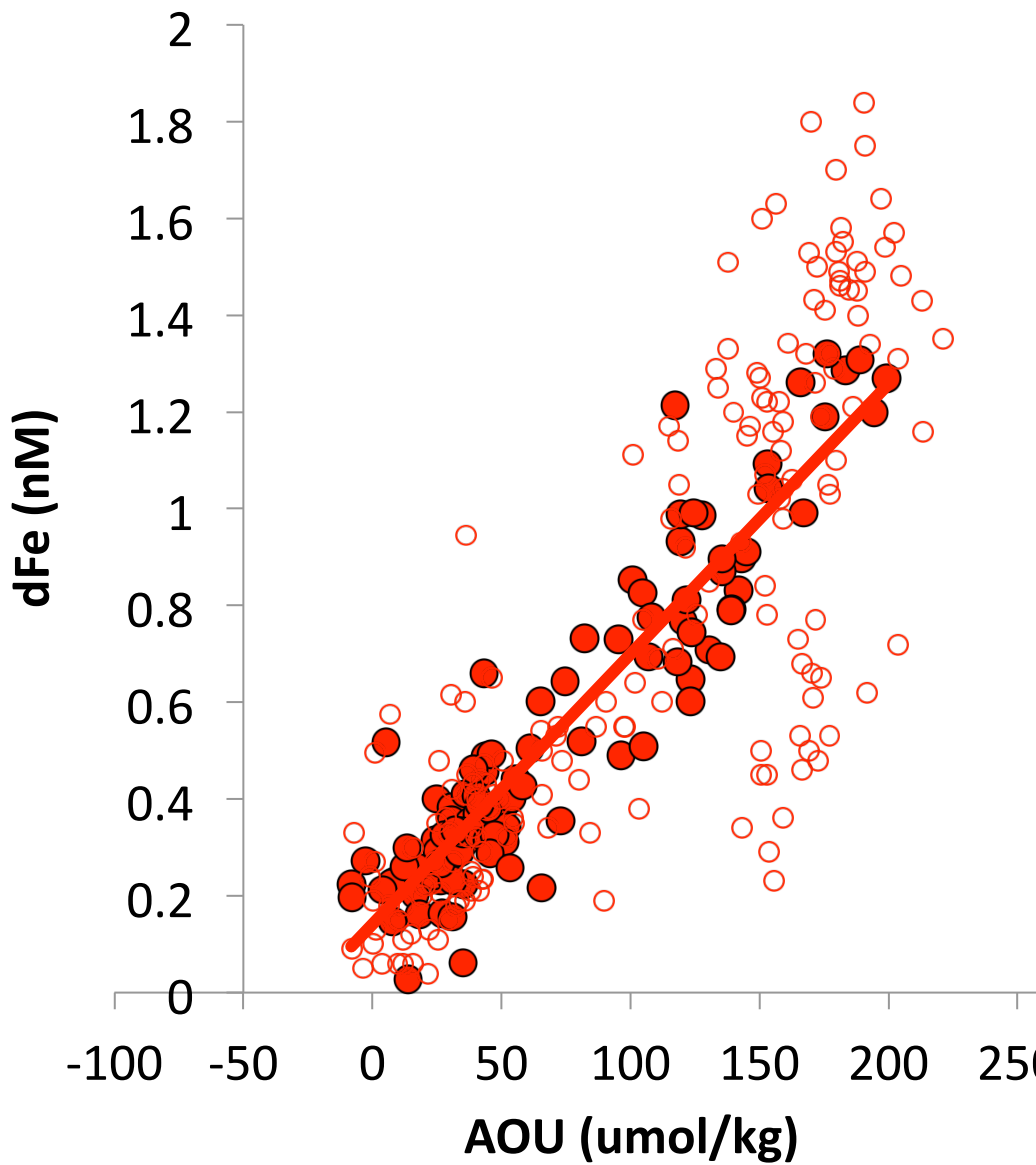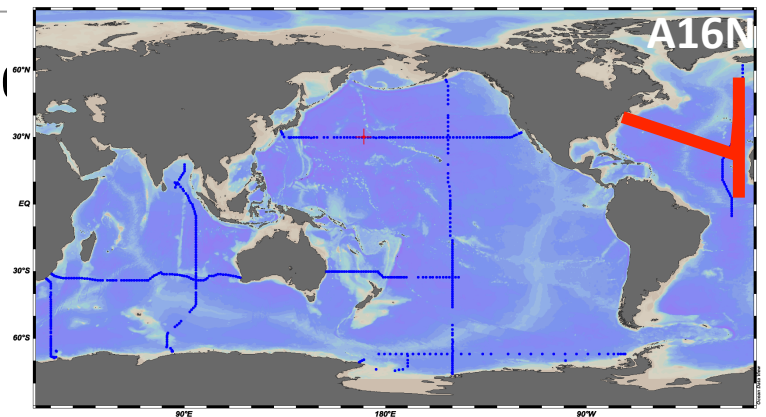△ CLIVAR A16S   S. Atlantic O
× CLIVAR I5   S. Indian O
× CLIVAR P02   N. Pacific O

GA03
100-400m (no GT10-09&-10)

y = 0.0056x + 0.1411
R² = 0.86054

100-400m, 43S-40N
● GEO_GA03
○ CLIVAR A16N   N. Atlantic O
△ CLIVAR A16S   S. Atlantic O
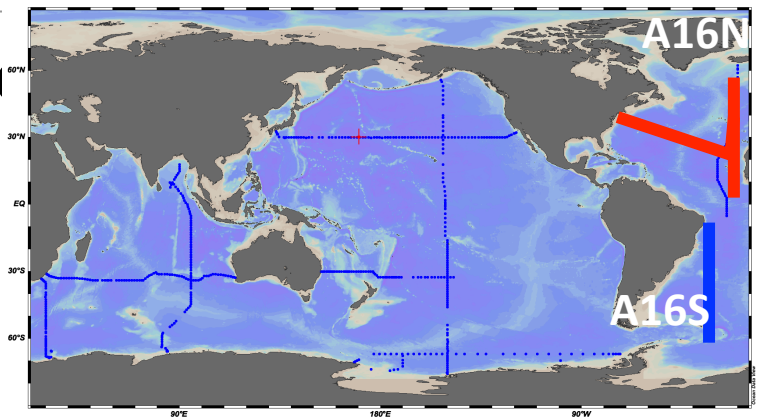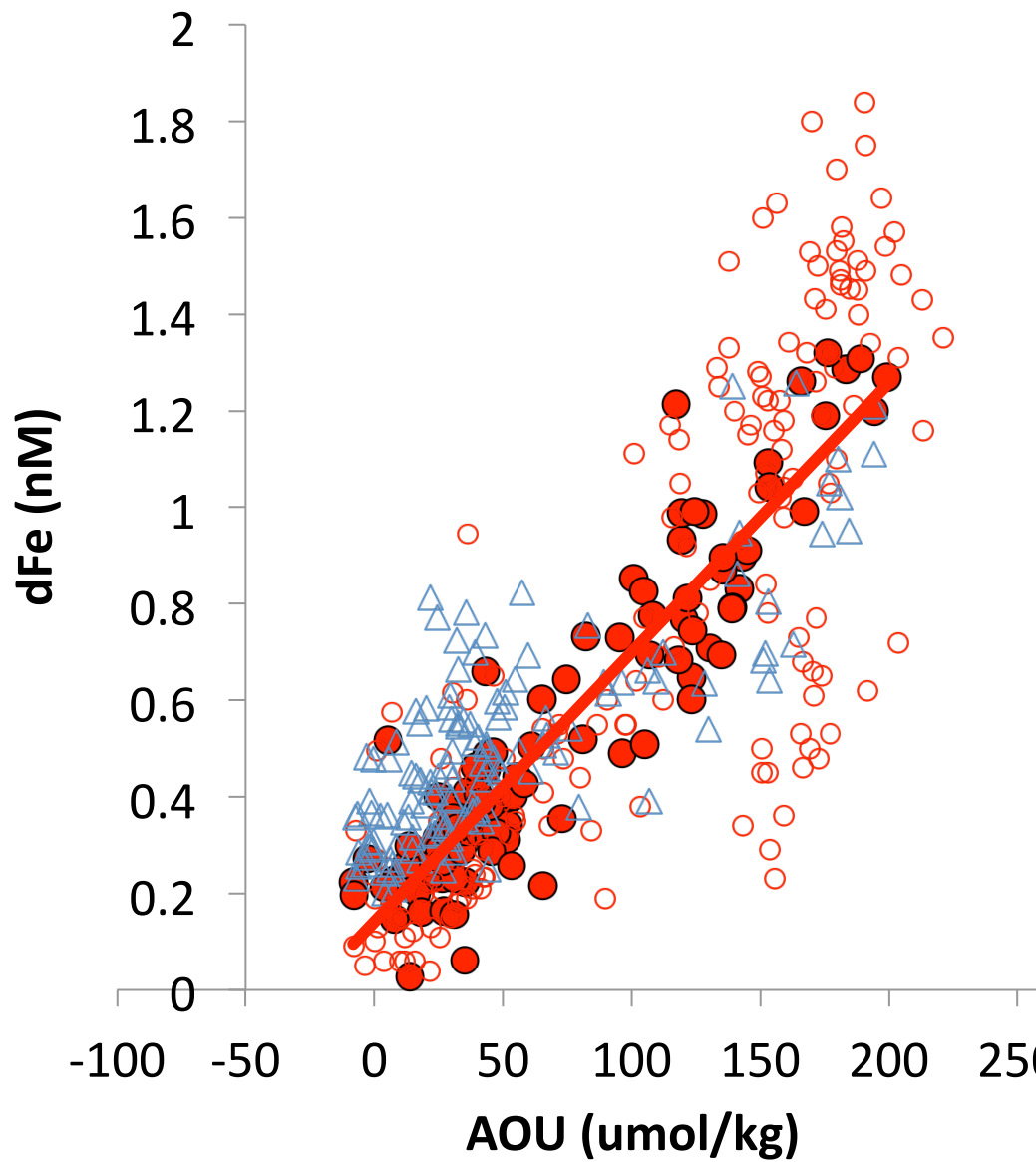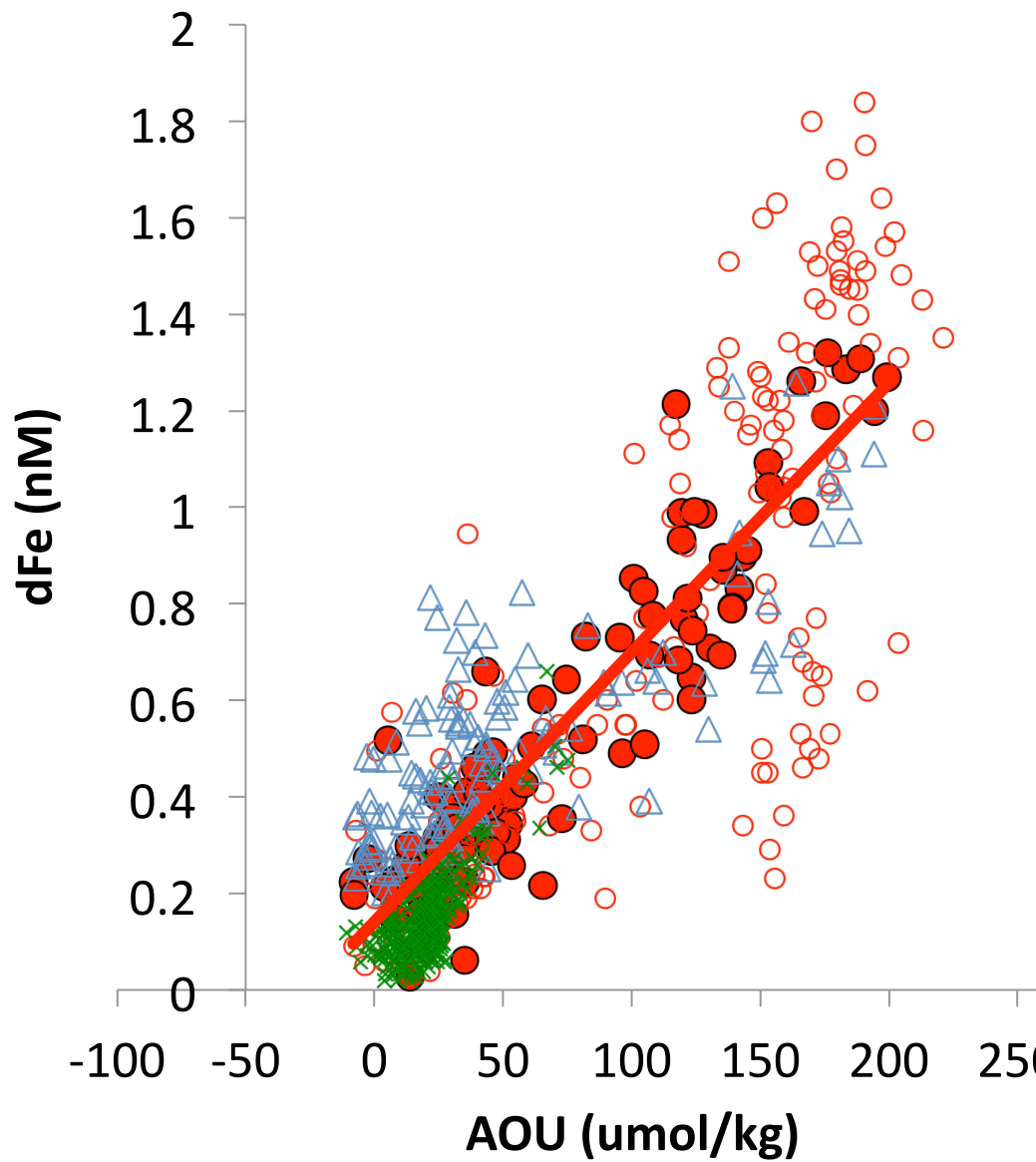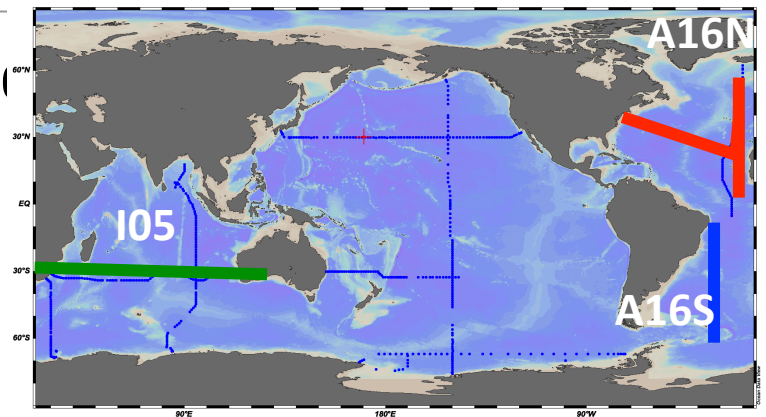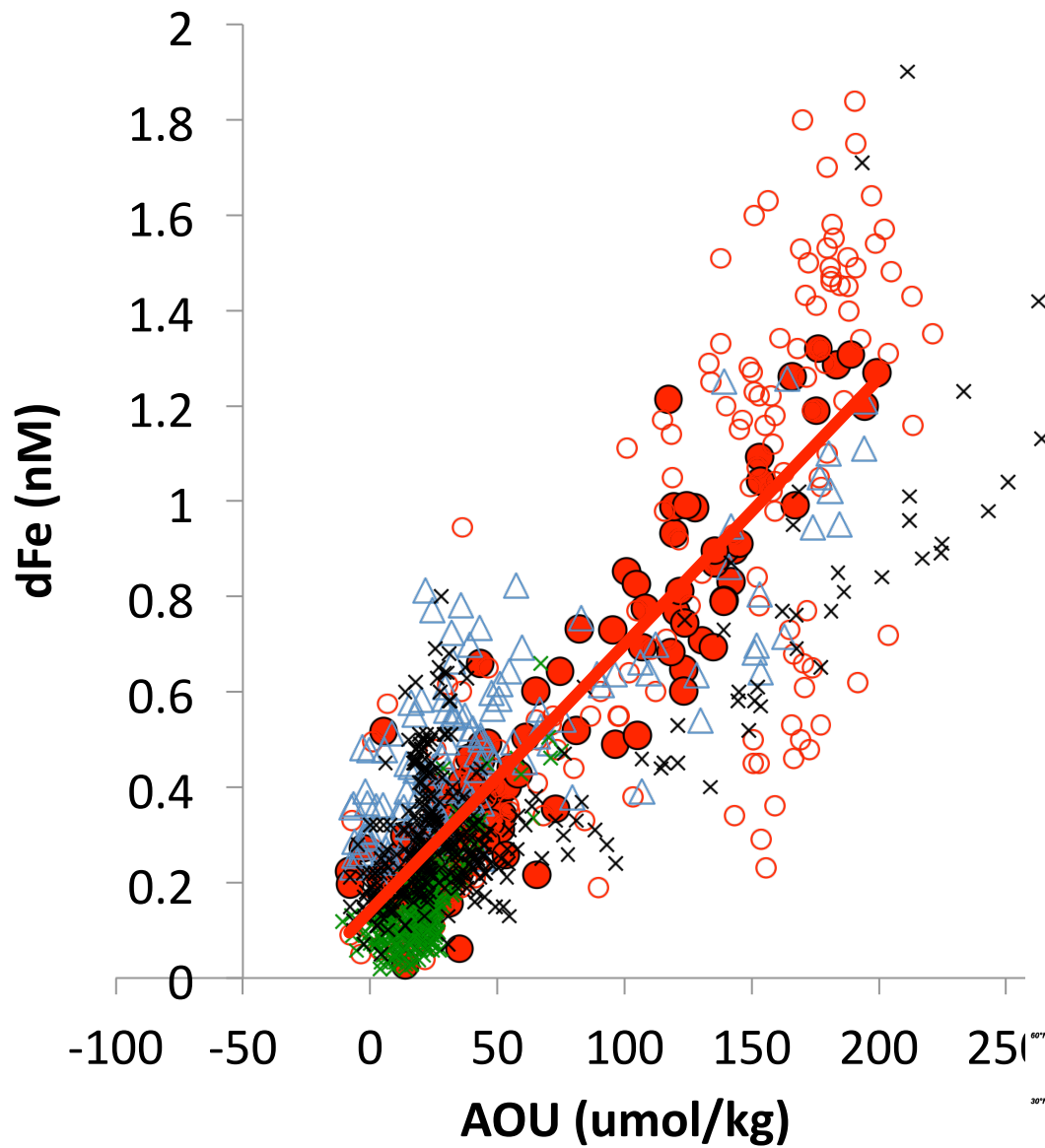× CLIVAR I5   S. Indian O
× CLIVAR P02   N. Pacific O

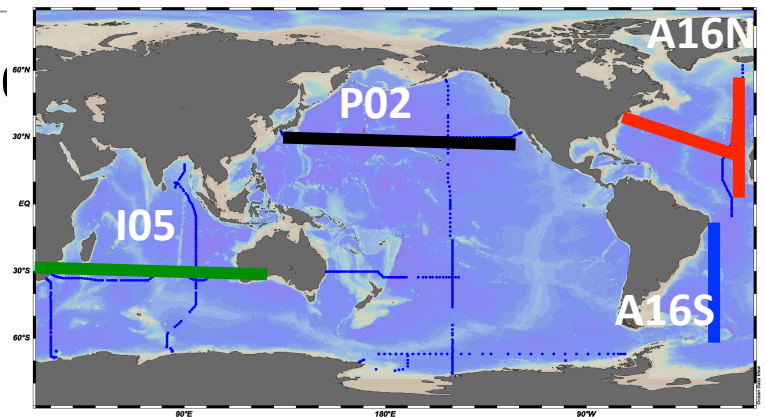GA03
100-400m (no GT10-09&-10)
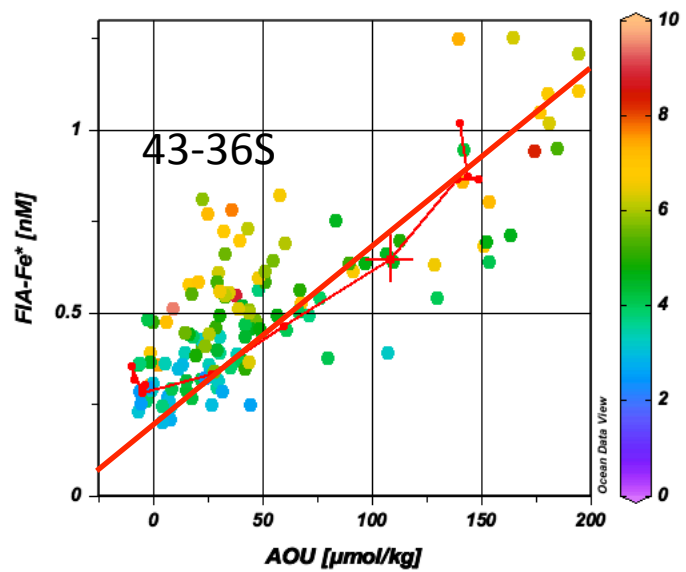
$y = 0.0056x + 0.1411$
$R^2 = 0.86054$

100-400m, 43S-40N
● GEO_GA03
○ CLIVAR A16N   N. Atlantic O
△ CLIVAR A16S   S. Atlantic O
× CLIVAR I5   S. Indian O
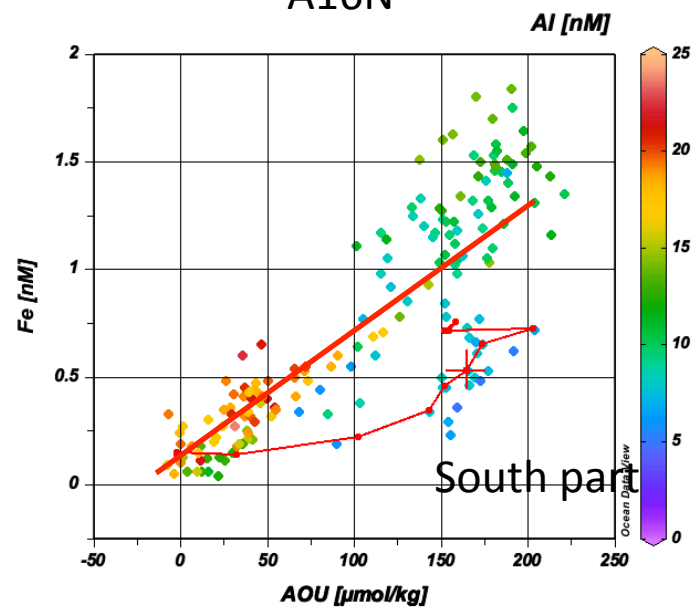× CLIVAR P02   N. Pacific O

this is a preliminary data, Yes... this is a bit of mess.. and need to identify water mass and classify individual regenerated rate and preformed Fe etc...

It will be interesting to compare the net regeneration rate with the cell stoichiometry data.

A16S

43-36S

FIA-Fe* [nM]

AOU [µmol/kg]

A16N

Al [nM]

Fe [nM]

AOU [µmol/kg]

South part

P02

Al [nM]

Western

Fe [nM]