Reviewer #1

This is categorically an FRRf paper and yet the authors 'muddy the water' by effectively integrating PAM- (multiple turnover, MT) and FRRf- (single turnover, ST) based concepts and publications (e.g. LN63 references). I have no issue with one or other approach in their own rights and it is understandable to cover as wider ground as possible BUT data from ST and MT cannot be easily reconciled; in the case of MT, the protocol itself introduces light-dependent artifacts that mean it is difficult to prescribe how light is potentially influencing Kc/RCII versus variable plastoquinone pool redox states. As such, I'd simply remove all references to MT-based studies (at least upfront when introducing the topics) unless the authors have good reason to maintain them. The article already has ca. 90 references so perhaps some streamlining would make sense and in no way affect the quality of the work.

Reviewer #2

Review of: Schuback, N. et al. Diurnal variation in the coupling of photosynthetic electron transport and carbon fixation in iron-limited phytoplankton in the NE subarctic Pacific. Second submission after major revisions.

General Comments:

The authors have adequately addressed the suggested revisions. Pending typographical revisions listed below, this MS is ready for publication.

Minor Revisions:

Introduction, Line 58. Change responds to responses.

Introduction, Line 70. This sentence is a bit confusing. I suggest '… pathways' divert absorbed energy away from the Calvin cycle, thus increasing 'the conversion factor…"

Introduction Line 111: Add a space after the word 'and'.

Methods, Line 234: Two concentrations of activity are stated, I assume 1.9425 GBq mL^{-1} is incorrect.

Results, Line 327: Add a space between quanta and m.

Results, Section 3.1: Please state the mixed layer depth.

Results, Section 3.4: The use of % to explain magnitude is a bit confusing. Better to simply state that, for example, K_c/n_{PSII} ranged by a factor of 2.45…

Discussion, Line 587: Switch tau to τ

End of Review