## Protonation State Determination In Proteins Using High Resolution X-ray Crystallography: Effects of Resolution and Completeness

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## **Supplementary Material**

Figure S1: C-O Bond Lengths for Glu residues in cMyBP-C C1 domain at 1.3Å resolution.  $B_{avg} = 24.4Å^2$ ,  $\sigma_{l(avg)} = 0.09Å$ . Adapted from (Fisher *et al.*, 2008).



Figure S2: C-O bond lengths for Glu residues in bovine pancreatic trypsin.  $B_{avg} = 10.0 \text{\AA}^2$ ,  $\sigma_{l(avg)} = 0.02 \text{\AA}^2$ 



Figure S3: C-O bond lengths for Glu residues in subtilisin Carlsberg.  $B_{avg}$  = 12.4Å<sup>2</sup>,  $\sigma_{l(avg)}$  = 0.04Å



Figure S4: C-O bond lengths for Glu residues in Lyoszyme.  $B_{avg} = 7.1 \text{\AA}^2$ ,  $\sigma_{l(avg)} = 0.008 \text{\AA}$