



Figure S1 An example of Lorentzian fitting to correct the non-smooth z-spectrum induced by motion artifacts. The motion-induced oscillations (ups and downs) in the z-spectrum can be handled by the Lorentzian fitting much better than the APTw (MTRasym) method (a). The abnormal signals caused by motion artifacts in the APT contrast map obtained by the MTRasym method (b) can be mostly eliminated by Lorentzian fitting (c).