Short Review On Low Dose CT Reconstruction

Claude Goubet

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1 Introduction

intro about CT and importance for osteoporosis diagnosis + use of SR + low dose problem CS ([1, 3, 10])

2 Dose reduction in SR Micro-CT

Multiple CS algorithm were developed for Micro-CT allowing to generate different spacial resolutions. Alternative methods then FBP necessary to recover missing projections. Iterative algorithms are used.

2.1 No SR

SART-L1 [15, 17] ASD-POCS TV [6]

2.2 CS on SR micro-CT

multiple iterative methods using CGTV ([16]) ART with multiple denoising (TV [14]; L1 minimisation [8]; Discrete packet shrinkage [13]) SART ([11] with TV [12]) OS-SART [7]) EST [4, 18] PCCT [5] define resolution for each solution (maybe more details?)

3 SR Nano-CT

Nano-CT general ref: [2] (I can have other references but are mostly about the hardware side, new materials and acquisition methodology, or image post-processing without having used low dose)
less CS reconstruction experimented
Low dose nano OS-SART L1 norm TV [9]

4 Conclusion

A lot of research these past few years of CSCT going toward a improvement of spacial resolution and dose reduction. Yet not so much has been done on Nano scale. In the context of osteoporosis nano scale is mandatory for a accurate diagnosis. Present our objective.

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