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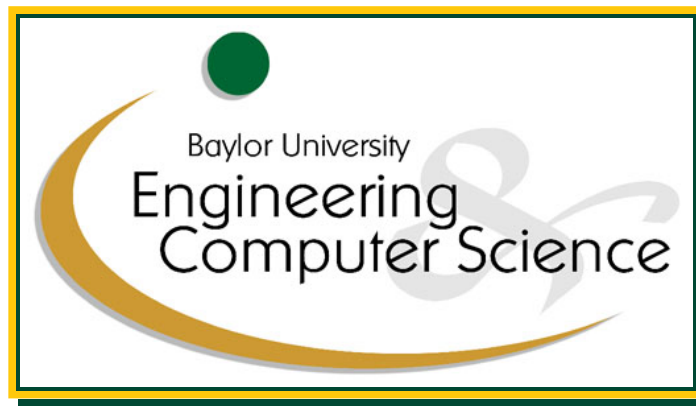
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## **INSTRUCTIONS FOR CITING EXISTING REFERENCES AND ADDING NEW PUBLICATION REFERENCES**

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# Part I

## Instructions

# 1 General pct.bib Information

## 1.1 : pct.bib SYNTAX GUIDELINES

### SYNTAX

#### Acquiring/Organizing Publication Reference Definitions

– References can be acquired either directly from the publisher, [1–3] when possible, or from such online resources as [IOPscience](#), [ResearchGate](#), [ScienceDirect](#), [CiteSeerX](#), [PubMed](#), or [IEEEExplore](#); the reference definitions are provided either in a downloadable `BIBTEX` file or a text window/field. These can then be added to the `pct.bib` file by copying the definition from either the `BIBTEX` file or from the text window/field to the clipboard and then pasting it into the appropriate reference section/category.

(1) `BIBTEX` .bib database entries are defined as:

```
@<type>{<citation-key>,  
  TITLE = {...},  
  AUTHOR = {...},  
  AUTHOR = {...},  
  PUBLISHER = {...},  
  :  
}
```

- (2) The publication type `<type>` (e.g. `@ARTICLE`, `@INPROCEEDINGS`) indicates the bibliographic source of the publication, each with an associated set of required/optional “`KEY = {...}`” fields; the various publication types and the required/optional fields for each are listed/detailed at [BIB<sub>TEX</sub>](#).
- (3) The `<citation-key>` is the unique name used in the `\cite{<citation-key>}` command to cite the corresponding publication and insert the associated reference information into the `TEX`document. Since the `<citation-key>` is used to identify the entry from within the `TEX`document, each entry **MUST** be given a unique key.
- (4) To prevent conflicts in this shared resource and establish convention, the `<citation-key>` is defined according to (1) author last name(s) & (2) the year of publication. For single author publications, the `<citation-key>` is defined as the author’s capitalized last name & publication year `YY` (e.g. `Johnson18`). For multiple author

publications, it's defined using the capitalized last initial of the 1<sup>st</sup> 2–6 authors & publication year YY (e.g. Schultze/Witt/Schubert/Schulte, 2012 → SWSS12). Most publications will fit this naming scheme, but for publications from an organization, regarding software/hardware, etc., the `<citation-key>` may be assigned some logical alternative naming scheme (e.g., see the `geant4` & `ImageJ2` software references). NOTE: the `.bib` entries obtained from the publisher or other online resource will NOT have a `<citation-key>` value matching this scheme, users must modify these to conform before adding the entry to the `.bib` file.

- (5) The '@' character is the BibTeX escape character preceding BibTeX control sequences (e.g. `@ARTICLE`, `@string`), equivalent to the '\ ' of TeX. Unlike with other TeXfiles, “line commenting” is not supported by BibTeX; all text appearing outside a BibTeX control sequence is considered a comment and ignored, but for clarity and safety, any necessary comments should be inserted using the explicit BibTeX “block commenting” control sequence `@COMMENT{...}`. NOTE: the '@' symbol can only be used in a valid BibTeX control sequence, any other usage will result in a BibTeX compilation error.

## 1.2 : pct.bib FORMATTING AND ORGANIZATION

### REFERENCES

#### Acquiring/Organizing Publication Reference Definitions

– References are organized by topic/category, [3] ordered by publication date from oldest to newest, within the following sections:

- (1) Proton beam theory, energy straggling, range uncertainty, etc.
- (2) Accelerator studies, scanner system, data acquisition, calibration, etc.
- (3) Preprocessing/prereconstruction: statistical data analysis/cuts, most-likely path (MLP) & system matrix, etc.
- (4) Hull-Detection, space/silhouette carving, etc.
- (5) Filtered Backprojection (FBP), cone/fan beam inversion, etc.
- (6) pCT image reconstruction, iterative reconstruction algorithms, etc.
- (7) pCT image reconstruction optimization: total variation superiorization (TVS), projected subgradient methods

(PSM), etc.

- (8) General pCT: theories/fundamentals, techniques and applications, etc.
- (9) Monte Carlo/geant4 simulations/studies: Scanner system, simplified proton beam, dose distributions, range uncertainties, planning verification, etc.
- (10) Dose evaluation/calculations, hadron/ion/proton/radio therapy & treatment planning, etc.
- (11) Miscellaneous: cancer/radiation oncology facts, image analysis, etc.

## 1.3 : BibTeX: DEFINING AUTHORSHIP AND CITATION STYLE

### PCT COLLABORATORS

#### List of Author Names & BibTeX Style Formatting

– Author names should be [Bib toc link](#) entered [1, 2] into the author field of each reference using their full first/last names and, when possible, middle name(s)/initial(s). Author first/middle names will automatically be abbreviated and/or omitted according to the BibTeX bibliography style specified by `\bibliographystyle{...}` in the document preamble; the publisher identifies/provides the corresponding BibTeX style (.bst) file required in its author instructions. Below is the list of pCT collaborator names as they should be entered into EACH reference they (co)authored. Collaborators that need to be added to this list or that need to [3] correct/expand the naming shown here should email [Blake.Schultze@Baylor.edu](mailto:Blake.Schultze@Baylor.edu) or [Keith.Schubert@Baylor.edu](mailto:Keith.Schubert@Baylor.edu) (make sure to cc [RSchulte@LLU.edu](mailto:RSchulte@LLU.edu) with the corresponding full first/last name AND middle name(s)/initial(s); full naming ensures unambiguous authorship regardless of the formatting of author names (e.g. omitted and/or abbreviated first/middle names).

- (1) Vladimir A. Bashkirov
- (2) Dan Butnariu
- (3) Yair Censor
- (4) George Coutrakon
- (5) Ran Davidi
- (6) Valentina Giacometti
- (7) Gabor T. Herman
- (8) Robert Ford Hurley
- (9) Robert P. Johnson
- (10) Paniz Karbasi
- (11) Nicolas T. Karonis
- (12) Ivan G. Kazantsev

- (13) S. Macafee
- (14) Scott A. McAllister
- (15) Caesar Ordoñez (Ordo{\~n}ez)
- (16) Mark Pankuch
- (17) Scott N. Penfold
- (18) Pierluigi Piersimoni
- (19) Tia E. Plautz
- (20) A. Plumb
- (21) Anatoly B. Rosenfeld
- (22) Keith E. Schubert
- (23) Hartmut F.-W. Sadrozinski
- (24) Reinhard W. Schulte
- (25) Blake Edward Schultze
- (26) D. Steinberg
- (27) Andriy Zatserklyaniy

## 1.4 : BIB<sub>T</sub>E<sub>X</sub> FILE LIBRARY

### BIB<sub>T</sub>E<sub>X</sub> FILES

#### BIB<sub>T</sub>E<sub>X</sub> .bst File List

- The BIB<sub>T</sub>E<sub>X</sub> database (.bib) files supplied by the pCT-collaboration/pCT\_Documentation repository provide authors with a collection of references relevant to pCT research publications and additional [3] resources useful [3] for maintaining/updating the pct.bib reference database.



- (1) `pct.bib` : the main BIB<sub>T</sub>E<sub>X</sub> database file containing the collection of pCT related reference definitions.
- (2) `authors.bib` : provides @string definitions for each of the pCT collaborator names listed [above](#).
- (3) `journal-names.bib/journal-abrvs.bib` : both database files provide @string definitions for the same set of common publishers, defined using the full/abbreviated publisher name, respectively. Authors choose whether publisher names are written in full or abbreviated within the manuscript by including the corresponding .bib file name in the `\bibliography{...}` CSV list.

## Bibliography

## References

- [1] R. P. Johnson, “Review of medical radiography and tomography with proton beams,” *Reports on Progress in Physics*, vol. 81, no. 1, p. 016701, 2018. [Online]. Available: <http://stacks.iop.org/0034-4885/81/i=1/a=016701> ..... 2, 5
- [2] C. T. Rueden, J. Schindelin, M. C. Hiner, B. E. DeZonia, A. E. Walter, E. T. Arena, and K. W. Eliceiri, “Imagej2: Imagej for the next generation of scientific image data,” *BMC Bioinformatics*, vol. 18, no. 1, p. 529, Nov 2017. [Online]. Available: <https://doi.org/10.1186/s12859-017-1934-z> 2, 5
- [3] C. Civinini, D. Bonanno, M. Brianzi, M. Carpinelli, G. Cirrone, G. Cuttone, D. L. Presti, G. Maccioni, S. Pallotta, N. Randazzo, M. Scaringella, F. Romano, V. Sipala, C. Talamonti, E. Vanzi, and M. Bruzzi, “Proton computed tomography: iterative image reconstruction and dose evaluation,” *Journal of Instrumentation*, vol. 12, no. 01, p. C01034, 2017. [Online]. Available: <http://stacks.iop.org/1748-0221/12/i=01/a=C01034> ..... 2, 3, 5, 6
- [4] C. Tschalär, “Straggling distributions of extremely large energy losses,” *Nuclear Instruments & Methods*, vol. 61, pp. 141–156, 1968.
- [5] International Commission on Radiation Units and Measurements, “Stopping powers and ranges for protons and alpha particles,” *ICRU Report*, vol. 49, 1993.
- [6] W. R. Leo, *Techniques for Nuclear and Particle Physics Experiments*, 2nd ed. Springer, 1994.
- [7] B. Schaffner and E. Pedroni, “The precision of proton range calculations in proton radiotherapy treatment planning: experimental verification of the relation between CT-HU and proton stopping power,” *Physics in Medicine & Biology*, vol. 43, pp. 1579–1592, 1998.
- [8] Y. Chen, E. Gomez, R. F. Hurley, Y. Nie, K. E. Schubert, and R. W. Schulte, “Accurate proton beam localization,” in *Proceedings of The 2012 International Conference on Bioinformatics and Computational Biology (BIOCOMP’12)*, 2012, pp. 213–217.
- [9] C.-A. C. Fekete, P. Doolan, M. F. Dias, L. Beaulieu, and J. Seco, “Developing a phenomenological model of the proton trajectory within a heterogeneous medium required for proton imaging,” *Physics in Medicine & Biology*, vol. 60, no. 13, pp. 5071–5082, 2015. [Online]. Available: <http://stacks.iop.org/0031-9155/60/i=13/a=5071>
- [10] G. N. Hounsfield, “Method of and apparatus for examining a body by radiation such as X or gamma radiation,” *U.S. Patent and Trademark Office*, no. US 3919552, Nov 1975.
- [11] —, “Method of and apparatus for examining a body by radiation such as X or gamma radiation,” U.S. Patent 3 919 552, Nov 11, 1975.
- [12] G. Coutrakon, J. Hubbard, J. Johanning, G. Maudsley, T. Slaton, and P. Morton, “A performance study of the loma linda proton medical accelerator,” *Medical Physics*, vol. 21, pp. 1691–1701, 1994.

- [13] M. Bruzzi, N. Blumenkrantz, J. Feldt, J. Heimann, H. F.-W. Sadrozinski, A. Seiden, D. Williams, V. A. Bashkirov, R. W. Schulte, D. Menichelli, M. Scaringella, G. Cirrone, G. Cuttone, N. Randazzo, V. Sipala, and D. L. Presti, "Prototype tracking studies for proton CT," *IEEE Transactions on Nuclear Science*, vol. 54, pp. 140–145, Feb 2007.
- [14] G. Cuttone, G. Cirrone, G. Candiano, F. D. Rosa, G. Russo, N. Randazzo, V. Sipala, S. L. Nigro, D. L. Presti, J. Feldt, J. Heimann, H. F.-W. Sadrozinski, A. Seiden, D. Williams, V. A. Bashkirov, R. W. Schulte, M. Bruzzi, and D. Menichelli, "Monte Carlo studies of a proton computed tomography system," *IEEE Transactions on Nuclear Science*, vol. 54, pp. 1487–1491, Oct 2007.
- [15] J. Missaghian, R. F. Hurley, V. A. Bashkirov, B. Colby, V. Rykalin, S. Kachigiun, D. Fusi, R. W. Schulte, M. F. Martinez, H. F.-W. Sadrozinski, and S. N. Penfold, "Beam test results of a csi calorimeter matrix element," *JINST*, vol. 5, p. P06001, 2010.
- [16] R. F. Hurley, R. W. Schulte, V. A. Bashkirov, G. Coutrakon, H. F.-W. Sadrozinski, and B. Patyal, "The phase i proton CT scanner and test beam results at llumc," *Transactions of the American Nuclear Society*, vol. 106, pp. 63–66, 2012.
- [17] R. F. Hurley, R. W. Schulte, V. A. Bashkirov, A. Wroe, A. Ghebremedhin, H. F.-W. Sadrozinski, V. Rykalin, G. Coutrakon, P. Koss, and B. Patyal, "Water-equivalent path length calibration of a prototype proton CT scanner," *Medical Physics*, vol. 39, pp. 2438–2446, 2012.
- [18] R. W. Schulte, V. A. Bashkirov, R. P. Johnson, H. F.-W. Sadrozinski, and K. E. Schubert, "Overview of the llumc/ucsc/csusb phase 2 proton CT project," in *Transactions of the American Nuclear Society*, vol. 106, 2012, pp. 59–62.
- [19] H. F.-W. Sadrozinski, R. P. Johnson, S. Macafee, A. Plumb, D. Steinberg, A. Zatserklyaniy, V. A. Bashkirov, R. F. Hurley, and R. W. Schulte, "Development of a head scanner for proton CT," *Nuclear Instruments & Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, vol. 699, pp. 205–210, 2013.
- [20] M. Scaringella, M. Bruzzi, M. Bucciolini, M. Carpinelli, G. A. P. Cirrone, C. Civinini, G. Cuttone, D. L. Presti, S. Pallotta, C. Pugliatti, N. Randazzo, F. Romano, V. Sipala, C. Stancampiano, C. Talamonti, E. Vanzi, and M. Zani, "A proton computed tomography based medical imaging system," *Journal of Instrumentation*, vol. 9, no. 12, p. C12009, 2014. [Online]. Available: <http://stacks.iop.org/1748-0221/9/i=12/a=C12009>
- [21] V. A. Bashkirov, R. P. Johnson, H. F.-W. Sadrozinski, and R. W. Schulte, "Development of proton computed tomography detectors for applications in hadron therapy," *Nuclear Instruments & Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, vol. 809, pp. 120–129, 2016. [Online]. Available: <http://www.sciencedirect.com/science/article/pii/S0168900215009274>
- [22] T. E. Plautz, V. A. Bashkirov, V. Giacometti, R. F. Hurley, R. P. Johnson, P. Piersimoni, H. F.-W. Sadrozinski, R. W. Schulte, and A. Zatserklyaniy, "An evaluation of spatial resolution of a prototype proton CT scanner," *Medical Physics*, vol. 43, no. 12, pp. 6291–6300, Dec 2016. [Online]. Available: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5097050/>
- [23] R. P. Johnson, V. A. Bashkirov, G. Coutrakon, V. Giacometti, P. Karbasi, N. T. Karonis, C. Ordoñez, M. Pankuch, H. F.-W. Sadrozinski, K. E. Schubert, and R. W. Schulte, "Results from a prototype proton-CT head scanner," *Conference on the Application of Accelerators in Research and Industry, CAARI 2016, 30 October - 4 November 2016, Ft. Worth, TX, USA*, Jul 2017. [Online]. Available: <https://arxiv.org/pdf/1707.01580>
- [24] R. P. Johnson, V. A. Bashkirov, L. DeWitt, V. Giacometti, R. F. Hurley, P. Piersimoni, T. E. Plautz, H. F.-W. Sadrozinski, K. E. Schubert, R. W. Schulte, B. E. Schultze, and A. Zatserklyaniy, "A fast experimental scanner for proton CT: Technical performance and first experience with phantom scans," *IEEE Transactions on Nuclear Science*, vol. 63, pp. 52–60, 2016.
- [25] R. W. Schulte, S. N. Penfold, J. Tafas, and K. E. Schubert, "A maximum likelihood proton path formalism for application in proton computed tomography," *Medical Physics*, vol. 35, pp. 4849–4856, Nov 2008.

## 1.4 GENERAL PCT.BIB INFORMATION: BibTeX FILE LIBRARY

- [26] V. A. Bashkirov, R. W. Schulte, G. Coutrakon, B. Erdelyi, K. Wong, H. F.-W. Sadrozinski, S. N. Penfold, A. B. Rosenfeld, S. A. McAllister, and K. E. Schubert, “Development of Proton Computed Tomography for Applications in Proton Therapy,” in *Application of Accelerators in Research and Industry: Twentieth International Conference*, F. D. McDaniel and B. L. Doyle, Eds., vol. AIP Conference Proceedings Volume 1099. Fort Worth (Texas): American Institute of Physics, Aug 10-15 2008, pp. 460–463, ISBN: 978-0-7354-0633-9.
- [27] S. N. Penfold, A. B. Rosenfeld, R. W. Schulte, and K. E. Schubert, “A more accurate reconstruction system matrix for quantitative proton computed tomography,” *Medical Physics*, vol. 36, no. 10, pp. 4511–4518, Oct 2009.
- [28] S. A. McAllister, K. E. Schubert, R. W. Schulte, and S. N. Penfold, “General purpose graphics processing unit speedup of integral relative electron density calculation for proton computed tomography,” in *Proceedings of the IEEE High Performance Medical Imaging Workshop 2009*, 2009.
- [29] K. N. Kutulakos and S. M. Seitz, “A theory of shape by space carving,” in *Proceedings of the Seventh International Conference on Computer Vision (ICCV)*, 1999, pp. 307–314.
- [30] —, “A theory of shape by space carving,” *International Journal of Computer Vision*, vol. 38, no. 3, pp. 199–218, Marr Prize Special Issue 2000.
- [31] S. Vedula, S. Baker, S. Seitz, and T. Kanade, “Shape and motion carving in 6d,” in *Proceedings of Computer Vision and Pattern Recognition Conference (CVPR)*, 2000.
- [32] W. Niem, “Robust and fast modelling of 3D natural objects from multiple views,” in *SPIE Proceedings Image and Video Processing*, vol. 2182, no. II, 1994, pp. 388–397.
- [33] —, “Error analysis for silhouette-based 3D shape estimation from multiple views,” in *Proceedings of International Workshop on Synthetic-Natural Hybrid Coding and Three-Dimensional Imaging*, 1997, pp. 143–146.
- [34] J. Canny, “A computational approach to edge detection,” *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 8, no. 6, pp. 679–698, Nov 1986.
- [35] B. E. Schultze, M. Witt, K. E. Schubert, and R. W. Schulte, “Space carving and filtered back projection as preconditioners for proton computed tomography reconstruction,” in *Proceedings of the IEEE Nuclear Science Symposium & Medical Imaging Conference (NSS/MIC) 2012*, 2012, pp. 4335–4340.
- [36] B. E. Schultze, M. Witt, Y. Censor, K. E. Schubert, and R. W. Schulte, “Performance of hull-detection algorithms for proton computed tomography reconstruction,” in *Infinite Products of Operators and Their Applications*, ser. Contemporary Mathematics, S. Reich and A. Zaslavski, Eds., vol. 636. American Mathematical Society, 2015, pp. 211–224.
- [37] J. Radon, “Über die bestimmung von funktionen durch ihre intergralwerte langsgewisser mannigfaltigkeiten (on the determination of functions from their integrals along certain manifolds),” *Berichte Saechsische Akademie der Wissenschaften*, vol. 29, pp. 262–277, 1917.
- [38] R. Bracewell and A. Riddle, “Inversion of fan beam scawns in radio astronomy,” *Astrophysics Journal*, vol. 150, pp. 427–434, 1967.
- [39] G. Ramachandran and A. Lakshminarayanan, “Three dimensional reconstructions from radiographs and electron micrographs: Application of convolution instead of Fourier transforms,” *Proceedings of the National Academy of Sciences, USA*, vol. 68, pp. 2236–2240, 1971.
- [40] A. Lakshminarayanan, “Reconstruction from divergent ray data,” Department of Computer Science, State University of New York at Buffalo, Tech. Rep., 1975.
- [41] L. Feldkamp, L. Davis, and J. Kress, “Practical cone-beam algorithms,” *Journal of the Optical Society of America*, vol. A1, pp. 612–619, 1984.

- [42] L. Shepp and B. Logan, “The Fourier reconstruction of a head section,” *IEEE Transactions on Nuclear Science*, vol. NS-21, pp. 21–43, 1974.
- [43] A. C. Kak and M. Slaney, *Principles of Computerized Tomographic Imaging*. New York: IEEE Press, 1988.
- [44] Y. Censor, T. Elfving, G. T. Herman, and T. Nikazad, “On diagonally relaxed orthogonal projection methods,” *SIAM Journal on Scientific Computing*, vol. 30, no. 1, pp. 473–504, 2008. [Online]. Available: <https://doi.org/10.1137/050639399>
- [45] G. T. Herman and R. Davidi, “Image reconstruction from a small number of projections,” *Inverse Problems*, vol. 24, no. 4, p. 045011, 2008. [Online]. Available: <http://stacks.iop.org/0266-5611/24/i=4/a=045011>
- [46] S. N. Penfold, R. W. Schulte, Y. Censor, V. A. Bashkirov, S. A. McAllister, K. E. Schubert, and A. B. Rosenfeld, “Block-iterative and string-averaging projection algorithms in proton computed tomography image reconstruction,” in *Biomedical Mathematics: Promising Directions in Imaging, Therapy Planning and Inverse Problems*, Y. Censor, M. Jiang, and G. Wang, Eds., The Huangguoshu International Interdisciplinary Conference. Madison, WI, USA: Medical Physics, 2010, pp. 347–367.
- [47] S. N. Penfold, “Image Reconstruction and Monte Carlo Simulations in the Development of Proton Computed Tomography for Applications in Proton Radiation Therapy,” Ph.D. dissertation, University of Wollongong, Australia, 2010.
- [48] S. N. Penfold and Y. Censor, “Techniques in iterative proton CT image reconstruction,” *Sensing and Imaging*, vol. 16, no. 1, Oct 2015. [Online]. Available: <https://doi.org/10.1007/s11220-015-0122-3>
- [49] M. Bruzzi, C. Civinini, M. Scaringella, D. Bonanno, M. Brianzi, M. Carpinelli, G. Cirrone, G. Cuttone, D. L. Presti, G. Maccioni, S. Pallotta, N. Randazzo, F. Romano, V. Sipala, C. Talamonti, and E. Vanzi, “Proton computed tomography images with algebraic reconstruction,” *Nuclear Instruments & Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, vol. 845, pp. 652–655, May 2017, Proceedings of the Vienna Conference on Instrumentation 2016. [Online]. Available: <http://www.sciencedirect.com/science/article/pii/S0168900216304454>
- [50] B. E. Schultze, P. Karbasi, V. Giacometti, T. E. Plautz, K. E. Schubert, and R. W. Schulte, “Reconstructing highly accurate relative stopping powers in proton computed tomography,” in *Proceedings of the IEEE Nuclear Science Symposium & Medical Imaging Conference (NSS/MIC) 2015*, Oct 2015, pp. 1–3.
- [51] R. Davidi, G. T. Herman, and Y. Censor, “Perturbation-resilient block-iterative projection methods with application to image reconstruction from projections,” *International Transactions in Operational Research*, vol. 16, no. 4, pp. 505–524, 2009. [Online]. Available: <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1475-3995.2009.00695.x>
- [52] G. T. Herman, E. Garduño, R. Davidi, and Y. Censor, “Superiorization: An optimization heuristic for medical physics,” *Medical Physics*, vol. 39, no. 9, pp. 5532–5546, 2012. [Online]. Available: <http://dx.doi.org/10.1118/1.4745566>
- [53] Y. Censor, “Weak and strong superiorization: Between feasibility-seeking and minimization,” *Analele Stiintifice ale Universitatii Ovidius Constanta, Seria Matematica*, vol. 23, pp. 41–54, Oct 2014.
- [54] Y. Censor, R. Davidi, and G. T. Herman, “Perturbation resilience and superiorization of iterative algorithms,” *Inverse problems*, vol. 26, p. 065008, Jun 2010.
- [55] Y. Censor, R. Davidi, G. T. Herman, R. W. Schulte, and L. Tetruashvili, “Projected subgradient minimization versus superiorization,” *Journal of Optimization Theory and Applications*, vol. 160, no. 3, pp. 730–747, Mar 2014. [Online]. Available: <https://doi.org/10.1007/s10957-013-0408-3>
- [56] Y. Censor, G. T. Herman, and M. Jiang, “Superiorization: Theory and applications,” Special Issue of *Inverse Problems*, vol. 33, no. 4, p. 040301, 2017. [Online]. Available: <http://stacks.iop.org/0266-5611/33/i=4/a=040301>

## 1.4 GENERAL PCT.BIB INFORMATION: BibTeX FILE LIBRARY

- [57] A. Chambolle, V. Caselles, M. Novaga, D. Cremers, and T. Pock, “An introduction to total variation for image analysis,” in *Theoretical Foundations and Numerical Methods for Sparse Recovery*, De Gruyter, 2010.
- [58] Y. Censor, “Can linear superiorization be useful for linear optimization problems?” *Inverse Problems*, vol. 33, no. 4, p. 044006, 2017. [Online]. Available: <http://stacks.iop.org/0266-5611/33/i=4/a=044006>
- [59] T. Humphries, J. Winn, and A. Faridani, “Superiorized algorithm for reconstruction of CT images from sparse-view and limited-angle polyenergetic data,” *Physics in Medicine & Biology*, vol. 62, no. 16, pp. 6762–6783, 2017. [Online]. Available: <http://stacks.iop.org/0031-9155/62/i=16/a=6762>
- [60] E. Helou, M. Zibetti, and E. Miqueles, “Superiorization of incremental optimization algorithms for statistical tomographic image reconstruction,” *Inverse Problems*, vol. 33, no. 4, p. 044010, 2017. [Online]. Available: <http://stacks.iop.org/0266-5611/33/i=4/a=044010>
- [61] E. Garduño and G. T. Herman, “Computerized tomography with total variation and with shearlets,” *Inverse Problems*, vol. 33, no. 4, p. 044011, 2017. [Online]. Available: <http://stacks.iop.org/0266-5611/33/i=4/a=044011>
- [62] Q. Yang, W. Cong, and G. Wang, “Superiorization-based multi-energy CT image reconstruction,” *Inverse Problems*, vol. 33, no. 4, p. 044014, 2017. [Online]. Available: <http://stacks.iop.org/0266-5611/33/i=4/a=044014>
- [63] O. Langthaler, “Incorporation of the superiorization methodology into biomedical imaging software,” Salzburg University of Applied Sciences, Salzburg, Austria, and the Graduate Center of the City University of New York, NY, USA, Marshall Plan Scholarship Report, September 2014, 76 pages.
- [64] B. Prommegger, “Verification and evaluation of superiorized algorithms used in. biomedical imaging: Comparison of iterative algorithms with and without superiorization for image reconstruction from projections,” Salzburg University of Applied Sciences, Salzburg, Austria, and the Graduate Center of the City University of New York, NY, USA, Marshall Plan Scholarship Report, October 2014, 84 pages.
- [65] C. Havas, “Revised implementation and empirical study of maximum likelihood expectation maximization algorithms with and without superiorization in image reconstruction,” Salzburg University of Applied Sciences, Salzburg, Austria, and the Graduate Center of the City University of New York, NY, USA, Marshall Plan Scholarship Report, October 2016, 49 pages.
- [66] S. N. Penfold, R. W. Schulte, Y. Censor, and A. B. Rosenfeld, “Total variation superiorization schemes in proton computed tomography image reconstruction,” *Medical Physics*, vol. 37, pp. 5887–5895, 2010.
- [67] D. Butnariu, R. Davidi, G. T. Herman, and I. G. Kazantsev, “Stable convergence behavior under summable perturbations of a class of projection methods for convex feasibility and optimization problems,” *IEEE Journal of Selected Topics in Signal Processing*, vol. 1, no. 4, pp. 540–547, Dec 2007.
- [68] Y. Censor, “Superiorization and perturbation resilience of algorithms: A bibliography compiled and continuously updated,” <http://math.haifa.ac.il/yair/bib-superiorization-censor.html>.
- [69] U. Linz, *Ion Beam Therapy: Fundamentals, Technologies, and Clinical Applications*, ser. Biological and Medical Physics, Biomedical Engineering. Springer, 2012, vol. 320.
- [70] A. Cormack and A. Koehler, “Quantitative proton tomography: preliminary experiments,” *Physics in Medicine & Biology*, vol. 21, no. 4, pp. 560–569, 1976. [Online]. Available: <http://stacks.iop.org/0031-9155/21/i=4/a=007>
- [71] K. M. Hanson, J. N. Bradbury, T. M. Cannon, R. L. Hutson, D. B. Laubacher, R. Macek, M. A. Paciotti, and C. A. Taylor, “The application of protons to computed tomography,” *IEEE Transactions on Nuclear Science*, vol. 25, no. 1, pp. 657–660, Feb 1978.
- [72] K. M. Hanson, “Proton computed tomography,” *IEEE Transactions on Nuclear Science*, vol. 26, no. 1, pp. 1635–1640, Feb 1979.



- [73] K. M. Hanson, J. N. Bradbury, T. M. Cannon, R. L. Hutson, D. B. Laubacher, R. J. Macek, M. A. Paciotti, and C. A. Taylor, "Computed tomography using proton energy loss," *Physics in Medicine & Biology*, vol. 26, no. 6, pp. 965–983, 1981. [Online]. Available: <http://stacks.iop.org/0031-9155/26/i=6/a=001>
- [74] G. Dedes, L. D. Angelis, S. Rit, D. Hansen, C. Belka, V. A. Bashkirov, R. P. Johnson, G. Coutrakon, K. E. Schubert, R. W. Schulte, K. Parodi, and G. Landry, "Application of fluence field modulation to proton computed tomography for proton therapy imaging," *Physics in Medicine & Biology*, vol. 62, no. 15, pp. 6026–6043, 2017. [Online]. Available: <http://stacks.iop.org/0031-9155/62/i=15/a=6026>
- [75] G. Dedes, R. P. Johnson, M. Pankuch, N. Detrich, W. M. A. Pols, S. Rit, R. W. Schulte, K. Parodi, and G. Landry, "Experimental fluence modulated proton computed tomography by pencil beam scanning," *Medical Physics*, vol. 45, pp. 3287–3296, May 2018.
- [76] S. Agostinelli, J. Allison, K. Amako *et al.*, "Geant4 - a simulation toolkit," *Nuclear Instruments & Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, vol. 506, no. 3, pp. 250–303, 2003. [Online]. Available: <http://www.sciencedirect.com/science/article/pii/S0168900203013688>
- [77] H. Jiang and H. Paganetti, "Adaptation of geant4 to Monte Carlo dose calculations based on CT data," *Medical Physics*, vol. 31, no. 10, pp. 2811–2818, 2004. [Online]. Available: <https://aapm.onlinelibrary.wiley.com/doi/abs/10.1118/1.1796952>
- [78] M. Witt, B. E. Schultze, R. W. Schulte, K. E. Schubert, and E. Gomez, "A proton simulator for testing implementations of proton CT reconstruction algorithms on GPGPU clusters," in *Proceedings of the IEEE Nuclear Science Symposium & Medical Imaging Conference (NSS/MIC) 2012*, 2012, pp. 4329–4334.
- [79] V. Giacometti, V. A. Bashkirov, P. Piersimoni, S. Guatelli, T. E. Plautz, H. F.-W. Sadrozinski, R. P. Johnson, A. Zatserklyaniy, T. Tessonier, K. Parodi, A. B. Rosenfeld, and R. W. Schulte, "Software platform for simulation of a prototype proton CT scanner," *Medical Physics*, vol. 44, no. 3, pp. 1002–1016, 2017. [Online]. Available: <http://dx.doi.org/10.1002/mp.12107>
- [80] A. Mustafa and D. Jackson, "The relation between x-ray CT numbers and charged particle stopping powers and its significance for radiotherapy treatment planning," *Physics in Medicine & Biology*, vol. 28, no. 2, pp. 169–176, Feb 1983.
- [81] N. Matsufuji, H. Tomura, Y. Futami, H. Yamashita, A. Higashi, S. Minohara, M. Endo, and T. Kanai, "Relationship between CT number and electron density, scatter angle and nuclear reaction for hadron-therapy treatment planning," *Physics in Medicine & Biology*, vol. 43, pp. 3261–3275, 1998.
- [82] A. Smith, "Vision 20/20: proton therapy," *Medical Physics*, vol. 36, pp. 556–568, 2009.
- [83] H. Paganetti, "Range uncertainties in proton therapy and the role of Monte Carlo simulations," *Physics in Medicine & Biology*, vol. 57, no. 11, pp. R99–R117, May 2012.
- [84] R. I. MacKay, "Image guidance for proton therapy," *Clin. Oncol. (R. Coll. Radiol.)*, vol. 30, no. 5, pp. 293–298, 2018. [Online]. Available: <http://iopscience.iop.org/article/10.1088/1361-6633/aa8b1d/meta>
- [85] A. C. Society, "Cancer facts and figures 2013," American Cancer Society Atlanta, Tech. Rep., 2013.
- [86] A. S. for Therapeutic Radiology (ASTRO), "Fast facts about radiation oncology," <https://www.astro.org/News-and-Media/Media-Resources/FAQs/Fast-Facts-About-Radiation-Therapy/Index.aspx>, Nov 2012.