

## A constitutive representation on the production of glottal waves

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## 参考文献

- [1] G. Fant, "Acoustic Theory of Speech Production with Calculations Based on X-ray Studies of Russian Articulations," Mouton & Co., Hague, 1960.
- [2] 古井貞熙, "デジタル音声処理," 東海大学出版会, 1985.
- [3] F. Itakura, and S. Saito, "Analysis Synthesis Telephony Based on the Maximum Likelihood Method," Reports of the 6th Int. Cong. Acoust., C-5-5, 1968.
- [4] B. S. Atal, and M. R. Schroeder, "Predictive Coding of Speech Signals," Reports of the 6th Int. Cong. Acoust., C-5-4, 1968.
- [5] J. D. Markel, and A. H. Gray, "Linear Prediction of Speech," Springer-Verlag, 1976.
- [6] 板倉文忠, "統計的手法による音声の特徴抽出," 東北大セミナー「音声情報処理」, II-5, 1971.
- [7] 板倉文忠, "線形予測係数の線スペクトル表現," 音響学会音声研究会資料, S75-34, 1975.
- [8] ヴェルナー・カーレ, "解剖学アトラス第三版," 文光堂, 1990.
- [9] 田窪行則, 前川喜久雄, 窪園晴夫, 本多清志, 白井克彦, 中川聖一, "音声," 岩波書店, 2004.
- [10] Jw. van den Berg, "Myoelastic-Aerodynamic Theory of Voice Production," J. Speech and Hearing Res., 1, 227-244, 1958.
- [11] 広戸幾一郎, "発声機構の面よりみた喉頭の病態生理," 耳鼻臨床, 59, 109-115, 1966.
- [12] M. Hirano, *Clinical Examination of Voice*, Springer-Verlag., 1981.
- [13] J. R. Ewald, "Die Physiologie des Kehlkopfes und der Luftrohre Stimmbildung," Handbuch der Laryngologie und Phinologie, Vol. 1, P. Heymann (ed), Vienna: Holder, 1898.
- [14] K. Ishizaka, and M. Matsudaira, "What Makes the Vocal Cords Vibrate," 6th Int. Congr. Acoust., Tokyo, B1-3, 1968.
- [15] B. H. Story, and I. R. Titze, "Voice Simulation with Body-Cover Model of the Vocal Folds," J. Acoust. Soc. Am., 97, 1249-1260, 1995.
- [16] Jw. van den Berg, J. T. Zantema, and P. Jr. Doornenbal, "On the Air Resistance and the Bernoulli Effect of the Human Larynx," J. Acoust. Soc. Am., 29, 626-631, 1957.

- [17] 飯嶋弘久, 三木信弘, 永井信夫, “非定常流れの有限要素シミュレーションに基づく声門インピーダンスの検討,” 電子情報通信学会論文誌, **J73-A(11)**, 1727-1734, 1990.
- [18] R. C. Scherer, D. Shinwari, K. J. De Witt, C. Zhang, B. R. Kucinski, and A. A. Afjeh, “Intraglottal Pressure Profiles for a Symmetric and Oblique Glottis with a Divergence Angle of 10 Degrees,” *J. Acoust. Soc. Am.*, **109**, 1616-1630, 2001.
- [19] R. C. Scherer, I. R. Titze, and J. F. Curtis, “The effect of exit radii on intraglottal pressure distributions in the convergent glottis,” *J. Acoust. Soc. Am.*, **110**, 2267-2269, 2001.
- [20] R. C. Scherer, D. Shinwari, K. J. De Witt, C. Zhang, B. R. Kucinski, and A. A. Afjeh, “Intraglottal Pressure Distributions for a Symmetric and Oblique Glottis with a Uniform Duct,” *J. Acoust. Soc. Am.*, **112**, 1253-1256, 2002.
- [21] R. S. McGowan, “An aeroacoustic approach to phonation,” *J. Acoust. Soc. Am.*, **83**, 696-704, 1988.
- [22] M. S. Howe, “Theory of Vortex Sound,” Cambridge University Press, 2003.
- [23] 三木信弘, “音声生成過程の音響理論の最近の進歩,” 日本音響学会誌, **48**, 15-19, 1992.
- [24] W. Zhao, C. Zhang, S. H. Frankel, and L. Mongeau, “Computational Aeroacoustics of Phonation, Part I: Computational Methods and Sound Generation Mechanisms,” *J. Acoust. Soc. Am.*, **112**, 2134-2146, 2002.
- [25] H. Schlichting, *Boundary-Layer Theory (8th Ed.)*, Springer Verlag, 1999.
- [26] X. Pelorson, A. Hirschberg, R. R. van Hassel, A. P. J. Wijnands, and Y. Auregan “Theoretical and Experimental Study of Quasisteady-Flow Separation within the Glottis during Phonation. Application to a Modified Two-Mass Model,” *J. Acoust. Soc. Am.*, **96**, 3416-3431, 1994.
- [27] F. Alipour, and R. C. Scherer, “Flow Separation in a Computational Oscillating Vocal Fold Model,” *J. Acoust. Soc. Am.*, **116**, 1710-1719, 2004.
- [28] 日本機械学会 編, “流れの数値シミュレーション,” コロナ社, 1988.
- [29] T. A. Driscoll, and L. N. Trefethen, *Schwartz-Christoffel Mapping*, Cambridge Univ. Pres., 2002.
- [30] B. H. Story, “母音の音源に関する生理と物理及びモデル化,” 日本音響学会誌, **58**, 426-437, 2002.
- [31] 今井功, “流体力学 前編,” 裳華房, 1973.
- [32] J. L. Flanagan, “Speech Analysis, Synthesis, and Perception (2nd Ed.),” Springer-Verlag, 1972.
- [33] N. Miki, Y. Lu, T. Yokoyama, and Y. Ogawa, “3-D FEM analysis of glottal flow using a direct simulation method,” SPECOM '97, 1997.

- [34] 巽友正, “流体力学,” 培風館, 1982.
- [35] 今井功, “等角写像とその応用,” 岩波書店, 1979.
- [36] 数値流体力学編集委員会編, “乱流解析 数値流体力学シリーズ 3,” 東京大学出版会, 137-160, 1995.
- [37] W. H. Press, S. A. Teukolsky, W. T. Vetterling, and B. P. Flannery, “Numerical recipes in C,” Cambridge University Press, 1988.
- [38] T. Cebeci, and H. B. Keller, “Shooting and Parallel Shooting Methods for Solving the Falkner-Skan Boundary-Layer Equation,” *J. Comp. Phys.*, **7**, 289-300, 1971.
- [39] S. G. C. Kalse, H. Bijl, and B. W. van Oudheusden, “A One-Dimensional Viscous-Inviscid Strong Interaction Model for Flow in Indented Channels With Separation and Reattachment,” *J. Biomech. Eng.*, **125**, 355-362, 2003.
- [40] J. T. Beale, and A. Majda, “Rates of Convergence for Viscous Splitting of the Navier-Stokes Equations,” *Math. Comput.*, **37**, 243-259, 1981.
- [41] 越塚誠一, “数値流体力学,” 培風館, 1997.
- [42] 田部洋祐, 曲淵健太郎, 籙木時彦 “声門流における境界層特性量の推定,” *日本音響学会誌*, **62**, 662-671, 2006.
- [43] 曲淵健太郎, “声門流の剥離を考慮した声門波生成機構のモデル化,” 九州大学大学院 修士論文, 2006.
- [44] J. C. Lucero, “Dynamics of the two-mass model of the vocal folds: Equilibria, bifurcations, and oscillation region,” *J. Acoust. Soc. Am.*, **94**, 3104-3111, 1994.
- [45] M. Rothenberg, “Acoustic Interaction between the Glottal Wave Source and the Vocal Tract,” in Stevens and Hirano (Eds.), *Vocal Fold Physiology* (University of Tokyo Press, Tokyo), 305-323, 1981.
- [46] M. J. Lighthill, “On Sound Generated Aerodynamically. I. General Theory,” *Proc. Roy. Soc.*, **211A**, 1107, 564-587, 1952.
- [47] 今市憲作, 辻本良信 “流体音響学,” 共立出版, 1991.
- [48] D. Shinwari, R. C. Scherer, K. J. De Witt, and A. A. Afjeh, “Flow Visualization and Pressure Distributions in a Model of the Glottis with a Symmetric and Oblique Divergent Angle of 10 degrees,” *J. Acoust. Soc. Am.*, **113**, 487-497, 2003.
- [49] 三木信弘, “声道のはたらきを見る,” *日本音響学会誌*, **56**, 498-502, 2000.
- [50] 伊理正夫, 垣田高夫, 笠原皓司, 戸川隼人, 野崎昭弘, 廣瀬健, 前原昭二, 森毅, “現代応用数学の基礎 3,” 日本評論社, 81-85, 1987.
- [51] P. M. Morse, and H. Feshbach, “Methods of Theoretical Physics,” McGraw-Hill, 52-53, 1953.

- [52] B. R. Kucinski, R. C. Scherer, K. J. De Witt, and T. T. M. Ng, "An Experimental Analysis of the Flow through a Driven Mechanical Model of the Vocal Folds," Proc. Intern. Conf. Voice Physiology and Biomechanics, 95-102, 2004.
- [53] 森口繁一, 一松信, 宇田川かね久, "岩波数学公式 II,"
- [54] 今井功, "古典物理の数理," 岩波出版, 2004.