

NOMENCLATURE

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| C_p | Specific heat at constant pressure |
| C_v | Specific heat at constant volume |
| k | Specific heat ratio |
| R | Ideal gas constant |
| C_{pc} | Specific heat at constant pressure for cold air |
| C_{ph} | Specific heat at constant pressure for burned gas |
| t | Temperature ratio |
| r | Compression pressure ratio |
| η_c | Compression isentropic efficiency |
| η_t | Expansion isentropic efficiency |
| $(r_{opt})_w$ | Pressure ratio corresponding to the maximum net work output |
| $(r_{max})_w$ | Largest pressure ratio corresponding to where net work output becomes zero |
| $(r_{opt})_\eta$ | Pressure ratio corresponding to the maximum efficiency |
| $(r_{max})_\eta$ | Largest pressure ratio corresponding to where efficiency becomes zero |

REFERENCES

[1] Chen, L., Lin, J., Sun, F., and Wu, C., 1998, "Efficiency of An Atkinson Engine at Maximum Power Density," *Energy Conversion and Management*, **39**, No. 3/4, pp. 337–341.

[2] Sun, G., Akbari, P., Grower, B., and Mueller, N., 2012, "Thermodynamics of the Wave Disk Engine," 48th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, AIAA Paper 2012-3704.

[3] Hou, S. S., 2007 "Comparison of Performances of Air Standard Atkinson and Otto Cycles with Heat Transfer Considerations," *Energy Conversion and Management*, **48**, No. 5, pp. 1683–1690.

[4] Ramesh, C. V., 2010 "Valved Heat Engine Working on Modified Atkinson Cycle," *Journal of Energy Resources Technology*, **132**, No. 1.

[5] Zhao, J., Xu, M., Li, M., Wang, B., and Liu, S., 2012 "Design and Optimization of an Atkinson Cycle Engine with the Artificial Neural Net output work Method," *Applied Energy*, **92**, Issue C, pp. 492-502.

[6] Paraga-Ramirez, P., Varney, M., Tarkleson, E., Muller, N., Akbari, P., and Piechna, J., 2012, "Development of a Wave Disk Engine Experimental Facility," 48th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, AIAA Paper 2012-3703.

[7] Akbari, P., and Nalim, M. R., 2009, "Review of Recent Developments in Wave Rotor Combustion Technology," *Journal of Propulsion and Power*, **25**, No. 4, pp. 833-844.

[8] Kamiuto, K., 2005 "Comparison of Basic Gas Cycles Under the Restriction of Constant Heat Addition," *Applied Energy*, **83**, No. 6, pp. 583-593.