

Our paper for ADG'2006

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Abstract. The abstract should summarize the contents of the paper using at least 70 and at most 150 words. It will be set in 9-point font size and be inset 1.0 cm from the right and left margins. There will be two blank lines before and after the Abstract. It is automatically formatted by llncs.cls.

1 Introduction

The future of motor vehicles is not clear in the beginning of the new century. Many factors have influenced a very important increase in the price of petrol barrels. Moreover, probably because of the climate change, preserving the environment is becoming a general concern.

After the proposal of different alternatives or improvements to the classic internal combustion engine

- rotary engines (like Wankel engine)
- improvements in the turbulence of the combustion chamber
- multi-valve (3,4,5) engines
- high-pressure direct injection (gasoline and diesel)

more radical proposals have arise [1, 2]:

- collaboration of two engines (hybrid gasoline, hybrid diesel), where the total power of the vehicle is

$$\delta = \sum_{i=1}^n \delta_i \quad ; \quad n \in \mathbb{N}$$

where δ_i is the power of the i th engine. Clearly, comparable measuring norms (DIN, SAE, CUNA) should be used [3].

- electric traction (in railway locomotive style, where the electricity is stored in batteries and also produced by an internal combustion engine –generator)
- alternatives to petrol, like bio-diesel or hydrogen (the latter with zero pollution levels, but difficult to store)
- fuel cell [4]
- pure electric vehicles.

2 Our Work

We have designed (using CAD) an alternative engine that should dramatically increase the low thermal efficiency of classic internal combustion engines. No prototype has been built yet.

2.1 The Mathematical Model of the New Engine

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2.2 Theoretical Advantages of the New Engine

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3 Conclusions

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References

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2. Risqui, P., Losa, E.: Hydrogen and other alternatives to petrol. Autobahn Verlag, Berlin, 2004.
3. Roa, A.: Multiple-engined road vehicles. In: Camp, J., Calm, J. (eds.), *Proceedings of the XIII Intl. Conference on Vehicle Engineering*. Buch & Book, Vienna, 2003.
4. Tito, J.L.: La célula de hidrógeno en vehículos industriales de tamaño medio-grande. *Pure & Appl. Thermod.* **33/2** (2003) 619–633.