Continuous Detonation Wave Rocket Engine (CDWRE) for space ap-plication is considered in the framework of French R&D and scienti¦c research. A CDWRE demonstrator and a dedicated test bench are de-signed by MBDA France. At ICARE-CNRS, theoretical and experimen-tal studies on the CDWRE internal processes are under progress. A detailed review of experimental investigations of this concept and its comparison with the conventional rocket engine can be found in recent publications [2, 3]. lated to a detonation front, the. mean §ow is steady. For the propulsion applications, an annular cylindrical combustion. chamber is the most appropriate. One-dimensional detonation wave propagation in channels of varying cross-section is reconsidered and studied in detail. Different analytical solutions are given for the case of an accelerated detonation wave in a converging channel and for a decelerated detonation wave in a diverging channel. Separation of the leading shock and the reaction zone in the second case is taken into account. Two- and three-dimensional problems of geometrical detonation wave dynamics can be solved by adapting the well-known approach of Whitham, but Whitham's method is based on a suitable one-dimensional analyti "Pulse detonation is a propulsion technology that involves detonation of fuel to produce thrust more efficiently than current engine systems. By literature survey and library research it is shown that Pulse Detonation Engine (PDE) more. "Pulse detonation is a propulsion technology that involves detonation of fuel to produce thrust more efficiently than current engine systems. As such, it sees potential applications in many sectors of the aerospace, aeronautic, and military industries. However, there remain engineering challenges that must be overcome before the PDE can see practical use. Current methods for initiating the detonation process need refinement. The Zel'dovich-von Neumann-Doering (ZND) theory uses the concept of finite-rate chemical reaction, according to which the detonation wave comprises two fundamental processes: a compression process given a shock wave followed by a deflagration process an induction and reaction front, these being separated by an induction zone, although in reality the detonation wave is not a shock wave 2D. but is composed of small cellular shock waves. 1. S. Eidelman, W. Grossmann, I. Lottati, Review of propulsion applications and numerical simulations of the pulsed detonation engine concept. Journal of Propulsion and Power, vol.7, p.857–865 (1991). ULSE detonation engines (PDEs) have recently been rec-ognized as a promising propulsion technology that offers advantages in thermodynamic cycle ef ciency, hardware simplic-ity, operation scalability, and reliability.1 The potential for self-aspirating operation is highly attractive from the perspectives of ef ciency and operation. The ow undergoes a sequence of compression and expansion waves and becomes sub-sonic after passing through the normal shock located in the divergent section of the diffuser. The inlet recovers a high percentage of the freestream total pressure by decelerating the air ow through the shock train.