Abstract. Navigation is a critical task for agents populating virtual worlds. In the last years, numerous solutions have been proposed to solve the path planning problem in order to enhance the autonomy of virtual agents. Those solutions mainly focused on static environments, eventually populated with dynamic obstacles. However, dynamic objects are usually more than just obstacles as they can be used by an agent to reach new locations. In this paper, we propose an online path planning algorithm in dynamically changing environments with unknown evolution such as physically based-environments. Our method represents objects in terms of obstacles but also in terms of navigable surfaces. This representation allows our algorithm to find temporal paths through disconnected and moving platforms.We will also show that the proposed method also enables several kinds of adaptations such as avoiding moving obstacles or adapting the agent postures to environmental constraints.