On Subdivision Graphs of Cylinder Graphs which are 2-steps Hamiltonian

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Let G be a graph with vertex set $V(G)$ and edge set $E(G)$. A (p, q)-graph $G = (V, E)$ is said to be AL(k)-traversal if there exist a sequence of vertices $\{v_1, v_2, \ldots, v_p\}$ such that for each $i = 1, 2, \ldots, p-1$, the distance for v_i and v_{i+1} is equal to k. We call a graph G a k-steps Hamiltonian graph if it has a AL(k)-traversal in G and the distance between v_p and v_1 is k. In this paper, we give a construction of subdivision graphs of cylinder graphs, $C_m \times P_n$, to be 2-steps Hamiltonian.

Keywords: k-steps Hamiltonian, cylinder graphs, subdivision graphs, $AL(k)$-traversal