**Theoretical Logistics: Distributing Perishable Goods over Long Distances**

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**Abstract:**

In the world of grocery transport, companies face the tough task of managing deliveries while dealing with various constraints. Each pickup and delivery problem is unique, making universal solutions hard to find, thus necessitating optimization. This study focuses on a specific scenario involving multi-commodity pickups and long-distance deliveries, inspired by a real company situation. We propose a mathematical approach to tackle these challenges and discuss different suitable algorithms. Our goal is to develop a strategy that efficiently assigns products to vehicles, minimizing transportation costs and meeting all time and resource constraints.

**References:**