

标题

作者^{1,2} 作者^{2,2} 作者^{3 3} 作者^{4 4}¹ 机构 1² 机构 2³ 机构 3⁴ 机构 4

October 27, 2014

2/3

An Hyper Graph Model for SpMV

In Hyper Graph $\mathcal{H} = (\mathcal{V}, \mathcal{N})$

- Vertex v_i represents row i of A .
- Net n_i contains vertices v_j with $a_{ij} \neq 0$ (dependency).
- A k partition of graph represents assignment of rows to k processes.

Optimization in two aspects:

- Each row i only receives data from vertices v_j with $v_j \in n_i$ and v_i, v_j in different parts of k partition.(pre-compute to find these vertices dependencies for later iteration use).
- A good k partition could minimize the total data transfer for all the rows

3/3