Algorithm 1 Calculate Gradient

Input: v: 网格顶点信息; m: 测量的尺寸信息; im: 输入的尺寸信息; pId: 每个尺寸对应的顶点信息
Output: G:梯度

for $i = 0; i < pId.size(); ++i$ **do**
  for $j = 0; j < pId[i].size() - 1; ++j$ **do**
    $p_1Id = pId[i][j]; p_2Id = pId[i][j+1]$
    $p_1 = v(p_1Id); p_2 = v(p_2Id);$
    $l = |p_1 - p_2|;$
    $l_t = \frac{im(i)}{m(i)} l;$
    $g = 4 * (l^2 - l_t^2)^2 * (p_1 - p_2);$
    $G(p_1Id) = g; G(p_2Id) = -g;$
  end for
end for