

FIGURE 1

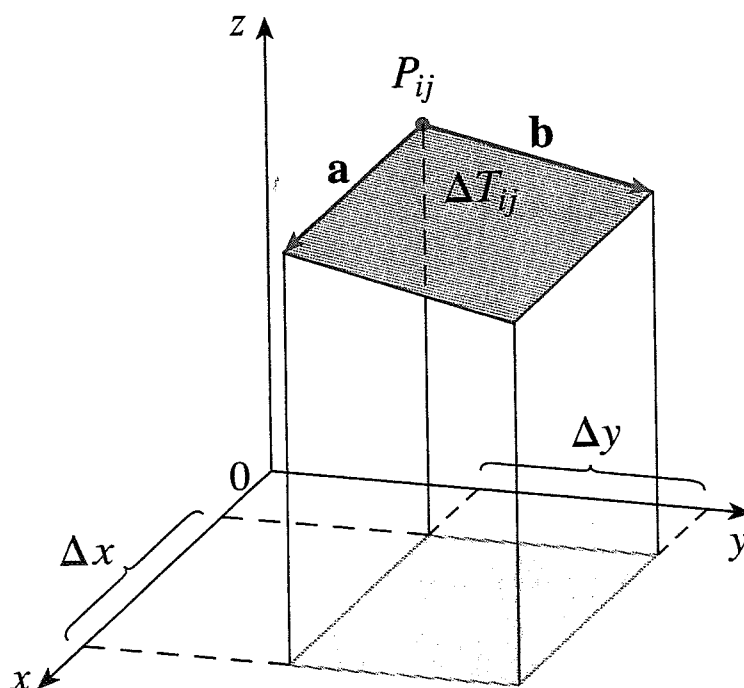


FIGURE 2

Let S be a surface above a domain D in the xy -plane. If (x_i, y_j) is a point in D , then the point P_{ij} is directly above (x_i, y_j) . So the point P_{ij} is above R_{ij} . Thus, the point P_{ij} appears to be the center of the surface area element ΔS_{ij} .

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To find the surface area of S , we let Δx and Δy be small numbers with area $\Delta A = \Delta x \Delta y$ and $f_y(x_i, y_j) = \Delta T_{ij}$. Therefore, the surface area element ΔS_{ij} is approximately

and