

Initialize: $q^a = q^{\min} = -b$, $q^b = q^{\max} = b$, $p^a = p^b = p$,
 $j = Nl$, $I(p) = 0$, $\Pi^a = (Nl)$, $\Pi^b = (Nl)$, $C = (T, T)$, step = 0

Trace back (q_j^a, p_j^a) and (q_j^b, p_j^b) and find the lines k and l from
which they are emitted. $\Pi^a = (k, \Pi^a)$, $\Pi^b = (l, \Pi^b)$, step = step+1

Are they emitted from the same line ($k = l$)?

Yes

No

Are they emitted from
the source ($k = 1$)?

No

Yes

Is $j = Nl$?

Yes

No

Do an interpolation between q^a and q^b
along direction p which gives $L_{\Pi^a}(q, p)$.

Apply bisection to (q^a, p)
and (q^b, p)

Find (q^c, p) and (q^d, p)
where $|q^c - q^d| < \text{toll}$
and $\Pi^c = \Pi^a$

$(q^b, p) = (q^c, p)$

$(q^a, p) = (q^d, p)$

$L_{\Pi^a}(q, p) = L_{\Pi^a}(q, p)$

$j = k$
Is $C(\text{step}) = T$?

Yes

No

Calculate the coordinates
 (q_j^a, p_j^a) and (q_j^b, p_j^b) of the
transmitted rays

Calculate the coordinates
 (q_j^a, p_j^a) and (q_j^b, p_j^b) of the
reflected rays