that hot spots develop that are approximately stationary with respect to the rotating disk (Anderson and Knapp, 1990). This scenario would present problems for the authors' algorithm, since the resulting temperature field would appear to move in the frame of reference (r, θ, z), reintroducing the difficulties associated with the traditional simulation. Perhaps they could suggest alternative strategies that would be effective in this case.

Additional References

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Burton, R. A., Nerlikar, V., and Kilaparti, S. R., 1973, "Thermoelastic Instability in a Seal-Like Configuration," *Wear*, Vol. 24, pp. 177–188.

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Authors' Closure

First point: grid refinement

A grid refinement near the heated surface for $n \neq 0$ would induce more accurate results but would also induce higher computer costs as the element stiffness matrices must be computed for each kind of element. In our case, a single element stiffness matrix is computed as only one kind (dimensions) of element is used. Further the global stiffness matrix combination ($[A] + n \times [B]$) is performed in a incremental way:

$([A] + [B])$,
$([A] + [B]) + [B]$,
$([A] + [B]) \ldots\ldots$ etc.

Consequently the meridian plane is meshed finely everywhere.

Second point:

Modeling the disk as a layered half plane with the layer modeled by the F.F.T.-F.E.M. method and the half plane by B.E.M. will not be adapted to industrial configuration where:

—thermal characteristic are temperature related,

—ventilated disks must be modelled in the near future.

Third point:

Yes, hot spots are fixed with respect to the disk, this is not a problem with the F.F.T.-F.E.M. technique because the F.F.T. transform takes into account basically the dephasing.