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Toolpath strategy for cutter life improvement in plunge milling of AISI H13 tool steel (Conference Paper) [\(Open Access\)](#)

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Abstract

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Machinability of AISI H13 tool steel is a prominent issue since the material has the characteristics of high hardenability, excellent wear resistance, and hot toughness. A method of improving cutter life of AISI H13 tool steel plunge milling by alternating the toolpath and cutting conditions is proposed. Taguchi orthogonal array with L9 (3-4) resolution will be employed with one categorical factor of toolpath strategy (TS) and three numeric factors of cutting speed (V_c), radial depth of cut (a_e), and chip load (f_z). It is expected that there are significant differences for each application of toolpath strategy and each cutting condition factor toward the cutting force and tool wear mechanism of the machining process, and medial axis transform toolpath could provide a better tool life improvement by a reduction of cutting force during machining. © Published under licence by IOP Publishing Ltd.

Indexed keywords

Engineering controlled terms: [Cutting](#) [Machining](#) [Manufacture](#) [Milling \(machining\)](#) [Steel](#) [Tool steel](#) [Tools](#)
[Wear of materials](#) [Wear resistance](#)

Compendex keywords: [Cutting conditions](#) [Cutting forces](#) [Life improvement](#) [Machining Process](#)
[Medial axis transforms](#) [Plunge millings](#) [Taguchi orthogonal arrays](#) [Tool wear mechanism](#)

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