

Method of generating a tool path

Abstract

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A method of determining an adaptive tool path for additive deposition to an aerofoil having a leading edge, a trailing edge and suction and pressure surfaces extending between the leading and trailing edges, the method comprising the steps: providing an aerofoil with a deposition plane; determining for the deposition plane points corresponding the leading
 10 edge, the trailing edge and the centre of a circle constrained by both the suction surface and the pressure surface when they are at their greatest distance apart; determining the position of the centre point of a circle the edge of which passes through the deposition plane points; determining a trailing edge reference line extending from the centre point of the circle through the trailing edge point, a leading edge reference line extending from the
 15 centre point of the circle through the leading edge point and one or more mid reference lines extending from the centre point of the circle through one or more mid reference points between the leading edge point and the trailing edge point; trimming each mid reference line to the bounds of the suction surface and pressure surface and determining the length of each mid reference line; applying an adaptive factor to the length of each mid
 20 reference line to provide an adaptive point for each mid reference line; determining an spline extending through the leading edge point, the trailing edge point and each adaptive point; and traversing a tool along the spline or a path offset from the spline by a predetermined factor.

25 Fig. 6