BS EN ISO 16610-29:2015

BSI Standards Publication

Geometrical product specifications (GPS) — Filtration

Part 29: Linear profile filters: Spline wavelets

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The UK participation in its preparation was entrusted to Technical Committee TDW/4, Technical Product Realization.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Geometrische Produktspezifikation (GPS) - Filterung - Teil 29: Lineare Profilfilter: Spline-Wavelets (ISO 16610-29:2015)

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Foreword

This document (EN ISO 16610-29:2015) has been prepared by Technical Committee ISO/TC 213 "Dimensional and geometrical product specifications and verification" in collaboration with Technical Committee CEN/TC 290 “Dimensional and geometrical product specification and verification” the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2015, and conflicting national standards shall be withdrawn at the latest by November 2015.

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Endorsement notice

The text of ISO 16610-29:2015 has been approved by CEN as EN ISO 16610-29:2015 without any modification.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 213, *Dimensional and geometrical product specifications and verification*.

This first edition cancels and replaces ISO/TS 16610-29:2006 which has been technically revised.

ISO 16610 consists of the following parts, under the general title *Geometrical product specifications (GPS) — Filtration*:

— *Part 1: Overview and basic concepts*

— *Part 20: Linear profile filters: Basic concepts*

— *Part 21: Linear profile filters: Gaussian filters*

— *Part 22: Linear profile filters: Spline filters*

— *Part 28: Profile filters: End effects*

— *Part 29: Linear profile filters: Spline wavelets*

— *Part 30: Robust profile filters: Basic concepts*

— *Part 31: Robust profile filters: Gaussian regression filters*

— *Part 32: Robust profile filters: Spline filters*

— *Part 40: Morphological profile filters: Basic concepts*

— *Part 41: Morphological profile filters: Disk and horizontal line-segment filters*

— *Part 49: Morphological profile filters: Scale space techniques*

— *Part 60: Linear areal filters: Basic concepts*

— *Part 61: Linear areal filters: Gaussian filters*

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— *Part 71: Robust areal filters: Gaussian regression filters*

— *Part 85: Morphological areal filters: Segmentation*

The following parts are planned:

— Part 26: *Linear profile filters: Filtration on nominally orthogonal grid planar data sets*

— Part 27: *Linear profile filters: Filtration on nominally orthogonal grid cylindrical data sets*

— Part 45: *Morphological profile filters: Segmentation*

— Part 62: *Linear areal filters: Spline filters*

— Part 69: *Linear areal filters: Spline wavelets*

— Part 70: *Robust areal filters: Basic concepts*

— Part 72: *Robust areal filters: Spline filters*

— Part 80: *Morphological areal filters: Basic concepts*

— Part 81: *Morphological areal filters: Sphere and horizontal planar segment filters*

— Part 89: *Morphological areal filters: Scale space techniques*

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Introduction

This part of ISO 16610 is a geometrical product specification (GPS) standard and is to be regarded as a general GPS standard (see ISO/TR 14638). It influences chain links 3 and 5 in the GPS matrix structure.

The ISO/GPS Masterplan given in ISO 14638 gives an overview of the ISO/GPS system of which this part of ISO 16610 is a part. The fundamental rules of ISO/GPS given in ISO 8015 apply to this part of ISO 16610 and the default decision rules given in ISO 14253-1 apply to specifications made in accordance with this part of ISO 16610, unless otherwise indicated.

For more detailed information of the relation of this part of ISO 16610 to the GPS matrix model, see Annex E.

This part of ISO 16610 develops the terminology and concepts for spline wavelets.

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INTERNATIONAL STANDARD ISO 16610-29:2015(E)

Geometrical product specifications (GPS) — Filtration —

Part 29: Linear profile filters: Spline wavelets

1 Scope

This part of ISO 16610 specifies spline wavelets for profiles and contains the relevant concepts. It gives the basic terminology for spline wavelets of compact support, together with their usage.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 16610-1, *Geometrical product specifications (GPS) — Filtration — Part 1: Overview and basic terminology*

ISO 16610-20, *Geometrical product specifications (GPS) — Filtration — Part 20: Linear profile filters: Basic concepts*

ISO 16610-22, *Geometrical product specifications (GPS) — Filtration — Part 22: Linear profile filters: Spline filters*

ISO/IEC Guide 99:2007, *International vocabulary of metrology — Basic and general concepts and associated terms (VIM)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC Guide 99, ISO 16610-1, ISO 16610-20, ISO 16610-22, and the following apply.

3.1
mother wavelet
function of one or more variables which forms the basic building block for wavelet analysis, related to a scalar function

Note 1 to entry: A mother wavelet, which usually integrates to zero, is localized in space and has a finite bandwidth. Figure 1 provides an example of a real-valued mother wavelet.

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