

ICS 17.040.20

CCS J04



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 26958.61-2023

**Geometrical product specification (GPS) - Filtration - Part 61:
Linear areal filters - Gaussian filters**

产品几何技术规范（GPS）滤波 第61部分：线性区域滤波器 高斯滤波器

Issued on: March 17, 2023

Implemented on: October 1, 2023

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

1 Scope	1
2 Normative references	1
3 Terms and Definitions	1
4 Properties of the linear planar Gaussian filter	2
5 Properties of Linear Cylindrical Gaussian Filters	6
6 Other information	9
17 Reference	18

Foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules for Standardization Documents" drafting: This document is part 61 of GB/T 26958 "Geometric Specifications for Products (GPS) Filtering": GB/T 26958 has been published The following sections:

- Part 1: Overview and basic concepts;
- Part 20: Basic concepts of linear contour filters;
- Part 21: Linear contour filter Gaussian filter;
- Part 22: Linear contour filter spline filter;
- Part 28: Contour filter end effect;
- Part 29: Linear contour filter spline wavelet;
- Part 30: Basic concepts of robust contour filters;
- Part 31: Robust contour filter Gaussian regression filter;
- Part 32: Robust contour filter spline filter;
- Part 40: Basic concepts of morphological contour filters;
- Part 41: Morphological contour filter disc and horizontal line segment filter;
- Part 49: Morphological contour filter scale space technology;
- Part 60: Basic concepts of linear region filters;

1 Scope

GB/T 26958.61-2023 is Part 61 of the Chinese GPS filtration series and specifies the linear areal Gaussian filter. Every roughness or waviness parameter ever quoted is a statement about a filtered surface, and areal measurement - where the instrument returns a map rather than a profile - needs its filter defined in two dimensions before S_a or S_q mean anything. The Gaussian filter is the default because it does not distort the phase of the surface it separates. The standard sets the properties of the linear planar Gaussian filter and of the linear cylindrical Gaussian filter, other information about their use, and the handling of end effects at the boundary of the measured area, with informative annexes giving an example, conceptual diagrams, and the relationship of this filter to the filtration matrix model and to the GPS matrix model. It took effect on 1 October 2023.

This document specifies a linear region Gaussian filter, in particular how to separate the long-wave and short-wave components of a surface: This document applies to rotationally symmetric filtering of nominal planes and filtering of nominal cylindrical surfaces:

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to this document: ISO 16610-

1 Geometric product specification (GPS) filtering Part 1: Overview and basic concepts [Geometrical product

Note: GB /Z 26958:1-2011 Product Geometric Specifications (GPS) Filtering Part 1: Overview and Basic Concepts (ISO /T S16610-1:2006, IDT) ISO 16610-

20 Product Geometric Specifications (GPS) Filtering Part 20: Basic Concepts of Linear Profile Filters [Geo-

Note: GB /Z 26958:20-2011 Product Geometric Specifications (GPS) Filtering Part 20: Basic Concepts of Linear Profile Filters (ISO / TS16610-20:2006, IDT) ISO 16610-

21 Product Geometric Specifications (GPS) Filtering Part 21: Linear Contour Filter Gaussian Filter [Geo-

GB/T 26958:21-2020 Product Geometric Specifications (GPS) Filtering Part 21: Linear Profile Filter Gaussian Filter (ISO 16610-21:2011, IDT) ISO 16610-

60 Product Geometric Specifications (GPS) Filtering Part 60: Basic Concepts of Linear Region Filters [Geo-

GB/T 26958:60-2023 Product Geometric Specifications (GPS) Filtering Part 60: Basic Concepts of Linear Domain Filters (

ISO 16610-60:2015, IDT) ISO /IEC Guide 98-

3 Uncertainty of Measurement Part 3: Guidelines for the Expression of Uncertainty in Measurement (GUM:1995) 1995]

GB/T 27418-2017 Evaluation and Expression of Measurement Uncertainty (ISO /IEC Guide 98-3:2008, MOD)

3 Terms and Definitions

ISO 16610-1, ISO 16610-20, ISO 16610-21, ISO 16610-60, ISO /IEC Guide 99 and ISO /IEC Guide 98-3 defined and the following terms and definitions apply to this document: