McCleary, John

A user's guide to spectral sequences. 2nd ed. (English) Zbl 0959.55001

Cambridge Studies in Advanced Mathematics. 58. Cambridge: Cambridge University Press. xv, 561 p. (2001).

The first edition of this excellent book has been reviewed in Zbl 0577.55001.

The biggest change in the second edition is the addition of two chapters. The new chapter 8^{bis} treats non simply-connected spaces, more specificly: nilpotent spaces. The Cartan-Leray spectral sequence and Lyndon-Hochschild-Serre spectral sequences are discussed. The new chapter 10 treats Bockstein spectral sequences in more detail. For a survey of the other chapters refer to the review of the first edition.

MSC:

55-02	Research exposition (monographs, survey articles) pertaining to algebraic topology
55Txx	Spectral sequences in algebraic topology
57T35	Applications of Eilenberg-Moore spectral sequences
18G40	Spectral sequences, hypercohomology
57T15	Homology and cohomology of homogeneous spaces of Lie groups
55R40	Homology of classifying spaces and characteristic classes in algebraic topology
55R20	Spectral sequences and homology of fiber spaces in algebraic topology
55Q40	Homotopy groups of spheres
55Q45	Stable homotopy of spheres
55M05	Duality in algebraic topology
57R19	Algebraic topology on manifolds and differential topology
55U10	Simplicial sets and complexes in algebraic topology
17B56	Cohomology of Lie (super)algebras
20J05	Homological methods in group theory
18F25	Algebraic K-theory and L-theory (category-theoretic aspects)
18G15	Ext and Tor, generalizations, Künneth formula (category-theoretic aspects)
22E41	Continuous cohomology of Lie groups