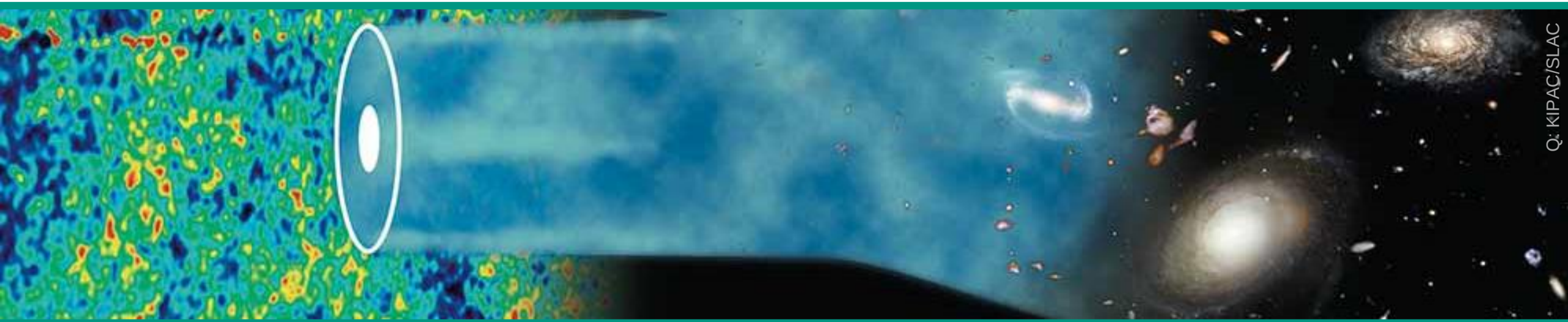


Introduction to Cosmology

WS22/23 Books & publications

Oct. 25, 2022



Q: KIPAC/SLAC

Cosmology – recommended books (in D)

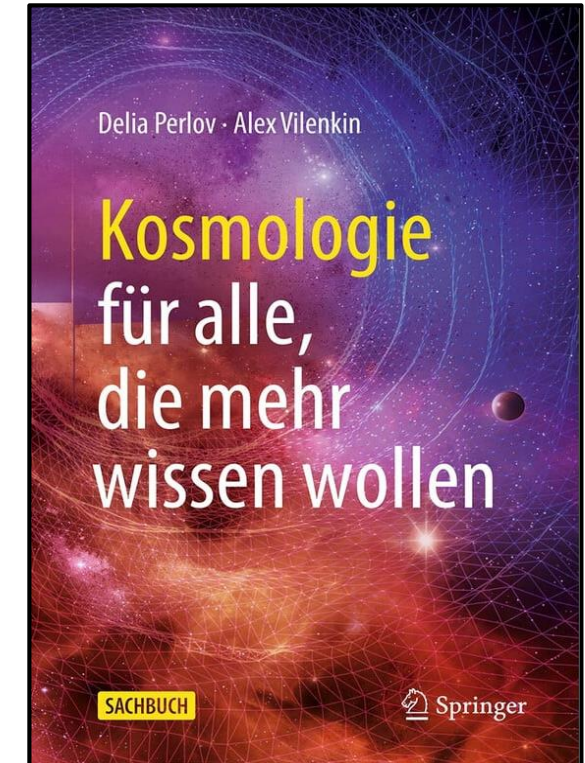


M. Bartelmann
Das kosmologische SM
Springer Spektrum, 2019

RECOMMENDED

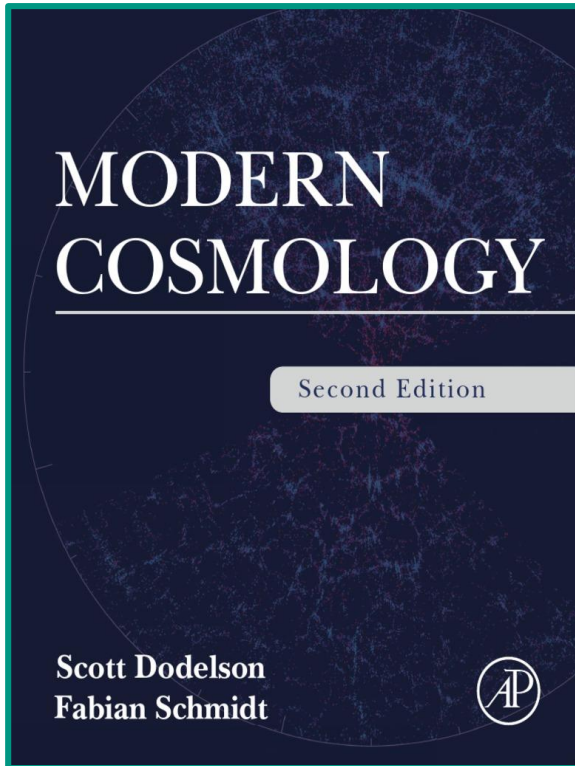


U. Ellwanger
Vom Universum zu El.-Teilchen
Springer Spektrum, 2019

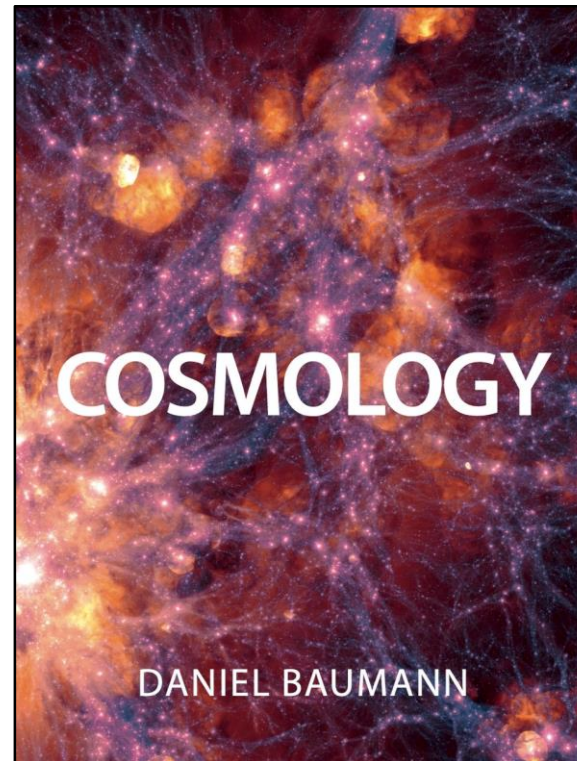


D. Perlov, A. Vilenkin
Kosmologie für alle, die mehr wissen wollen | SpringerLink, 2021

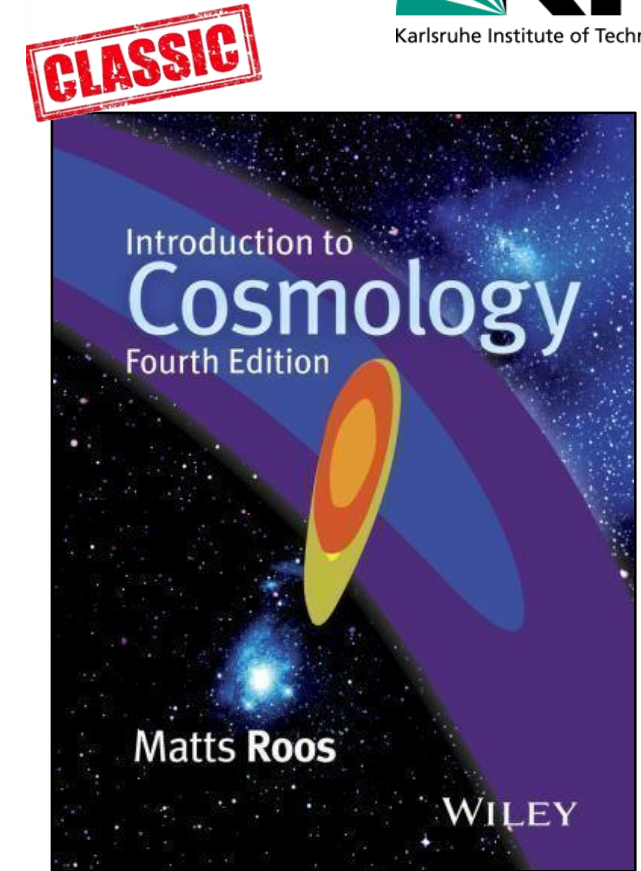
Cosmology – recommended books (in GB)



S. Dodelson & F. Schmidt
Modern Cosmology
Academic Press, 2021



Daniel Baumann
Cosmology (new ed.)
Cambridge, 2022



Matts Roos
Introduction to Cosmology
Wiley, 2015

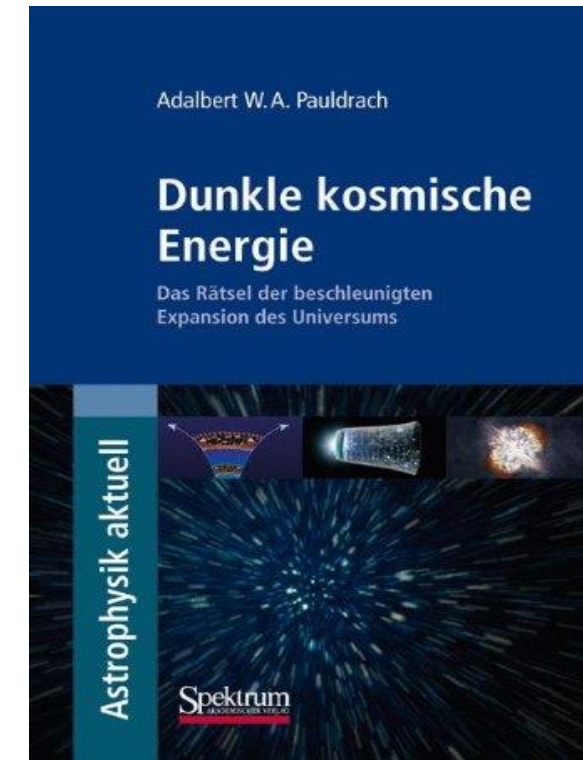
Cosmology – ‘popular science’ Spektrum (D)



H. Hetznecker
Kosm. Strukturbildung
Spektrum, 2009

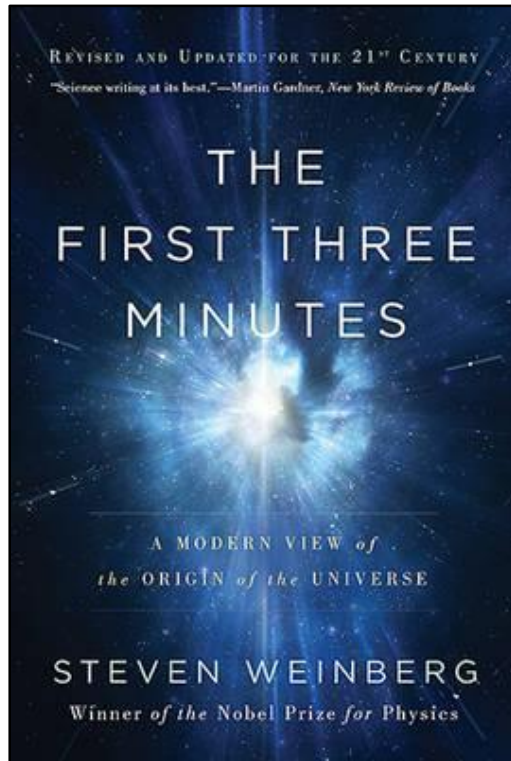


H. Hetznecker
Expansion Universum
Spektrum, 2009



A. W. A. Pauldrach
Dunkle Energie
Spektrum, 2009

Further infos – „the introduction“ to cosmology



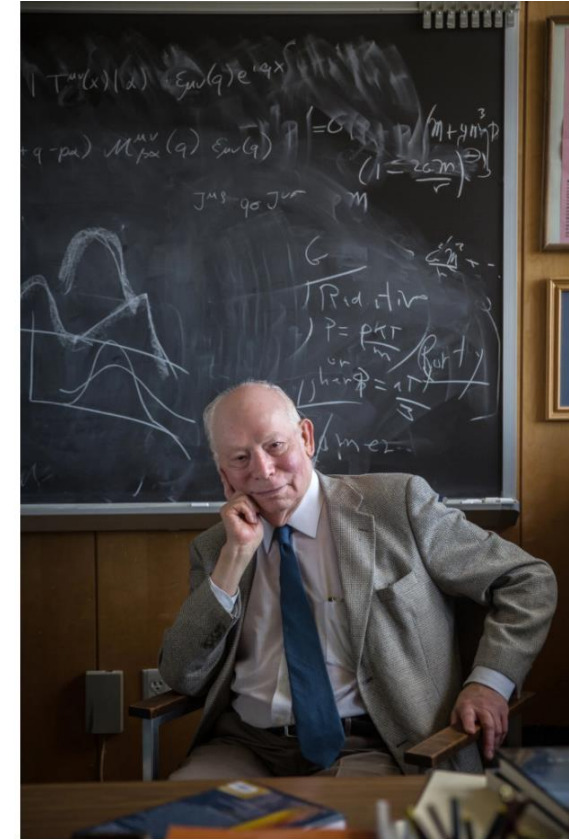
Steven Weinberg
The first three minutes
Spektrum, 2009

The New York Times

Steven Weinberg, Groundbreaking Nobelist in Physics, Dies at 88

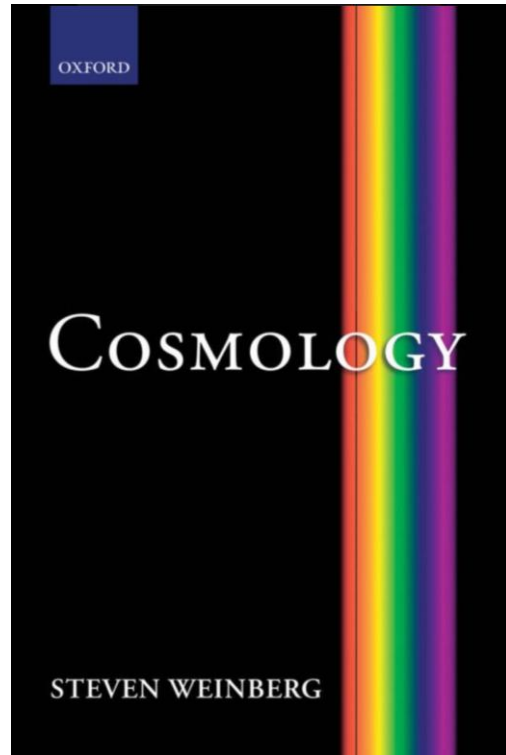
His discoveries deepened understanding of the basic forces at play in the universe, and he took general readers back to its dawn in his book “The First Three Minutes.”

RECOMMENDED

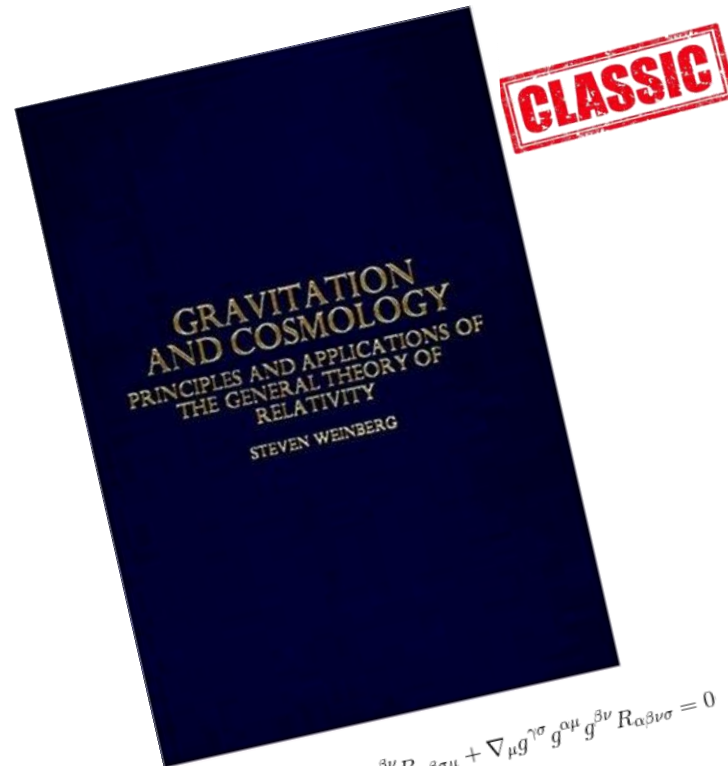


Dr. Steven Weinberg at the University of Texas at Austin. Though he had the respect, almost awe, of his colleagues for his scientific abilities, he also possessed a rare ability among scientists to communicate and explain abstruse scientific ideas to the public. Tamir Kalifa for The New York Times

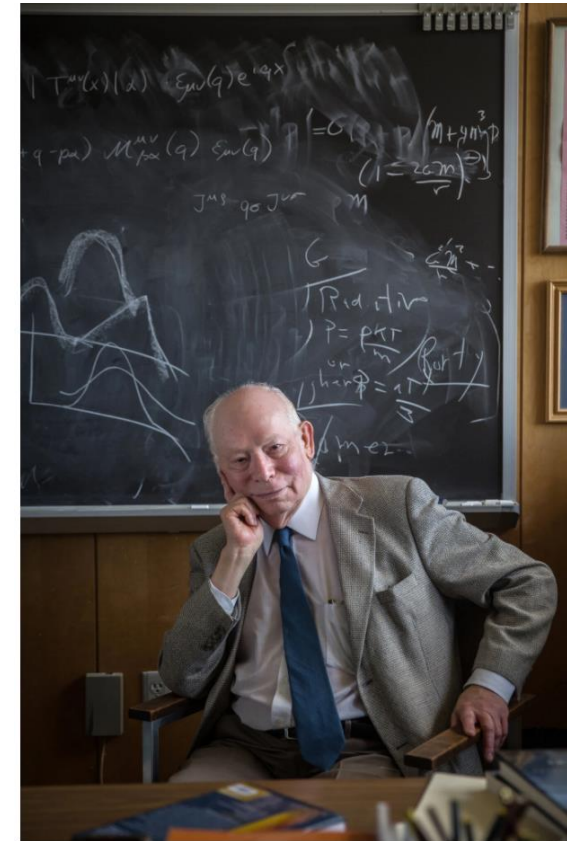
Theory bible – „the introduction“ to cosmology



Steven Weinberg
Cosmology
Oxford, 2008



$$\begin{aligned}\nabla_\sigma g^{\gamma\sigma} g^{\alpha\mu} g^{\beta\nu} R_{\alpha\beta\mu\nu} + \nabla_\nu g^{\gamma\sigma} g^{\alpha\mu} g^{\beta\nu} R_{\alpha\beta\sigma\mu} + \nabla_\mu g^{\gamma\sigma} g^{\alpha\mu} g^{\beta\nu} R_{\alpha\beta\nu\sigma} &= 0 \\ \nabla_\sigma g^{\gamma\sigma} R + \nabla_\nu g^{\gamma\sigma} g^{\alpha\mu} g^{\beta\nu} R_{\alpha\beta\sigma\mu} + \nabla_\mu g^{\gamma\sigma} g^{\alpha\mu} g^{\beta\nu} R_{\alpha\beta\nu\sigma} &= 0 \\ \nabla_\sigma g^{\gamma\sigma} R + \nabla_\nu g^{\gamma\sigma} g^{\alpha\mu} g^{\beta\nu} R_{\sigma\mu\alpha\beta} + \nabla_\mu g^{\gamma\sigma} g^{\alpha\mu} g^{\beta\nu} R_{\nu\sigma\alpha\beta} &= 0 \\ \nabla_\sigma g^{\gamma\sigma} R - \nabla_\nu g^{\gamma\sigma} g^{\alpha\mu} g^{\beta\nu} R_{\mu\sigma\alpha\beta} - \nabla_\mu g^{\gamma\sigma} g^{\alpha\mu} g^{\beta\nu} R_{\nu\sigma\beta\alpha} &= 0\end{aligned}$$



...for the theorist in us all...

Cosmology – further information

arXiv

arXiv.org

astro-ph (astrophysics)
hep-ex, nucl-ex (experiment)
hep-ph (phenomenology)

