

ZEUGNIS

über die BachelorprüfungCertificate on the Examination for the Bachelor Programme

an der KIT-Fakultät für Physik at the KIT Department of Physics

Die Übereinstimmung dieser Abschrift, mit der Urschrift beglaubigt. Karlsruhe, den . 0.6. SEP. . 2016 Karlsruher Institut für Technologie (KIT) Studium und Lehre

Julian Christoph Bitterwolf

geboren am 5. Oktober 1990 in Schwäbisch Hall born on October 5, 1990 in Schwäbisch Hall

hat die Bachelorprüfung im Studiengang has completed the Bachelor programme in

Physik

Physics

mit der Gesamtnote with the overall grade

"sehr gut" (1,3)

"very good" (1.3)

und den auf den folgenden Seiten aufgeführten Einzelnoten abgelegt. and the individual grades given on the following pages.

Karlsruhe, 21. Dezember 2015 Karlsruhe, December 21, 2015

Dekan der KIT-Fakultät für Physik Dean of the KIT Department of Physics



BACHELORARBEIT (10 LP):

Thema:

Path Integration via Infinitesimal Complex Time Phases

Referent(en):

Prof. Dr. Jörg Schmalian

Note:

sehr gut

Note. Serii gat		100
Prüfungsfach/Modul	Note	LP
Klassische Experimentalphysik	gut	24,0
Klassische Experimentalphysik I	sehr gut	8,0
Klassische Experimentalphysik II	gut	7,0
Klassische Experimentalphysik III	gut	9,0
Klassische Theoretische Physik	sehr gut	20,0
Klassische Theoretische Physik I	sehr gut	6,0
Klassische Theoretische Physik II	gut	6,0
Klassische Theoretische Physik III	sehr gut	8,0
Moderne Experimentalphysik	sehr gut	24,0
Modulübergreifende Prüfung "Moderne Experimentalphysik I - III"	sehr gut	
Moderne Experimentalphysik I	bestanden	8,0
Moderne Experimentalphysik II	bestanden	8,0
Moderne Experimentalphysik III	bestanden	8,0
Moderne Theoretische Physik	gut	24,0
Modulübergreifende Prüfung "Moderne Theoretische Physik I - III"	gut	
Moderne Theoretische Physik I	bestanden	8,0
Moderne Theoretische Physik II	bestanden	8,0
Moderne Theoretische Physik III	bestanden	8,0
Praktikum Klassische Physik	bestanden	12,0
Praktikum Klassische Physik I	bestanden	6,0
Praktikum Klassische Physik II	bestanden	6,0
Praktikum Moderne Physik	bestanden	6,0
Praktikum Moderne Physik	bestanden	6,0
Programmieren und Rechnernutzung	bestanden	12,0
Programmieren	bestanden	6,0
Rechnernutzung	bestanden	6,0
Mathematik	sehr gut	24,0
Analysis II	gut	8,0
Analysis III	sehr gut	8,0
Funktionentheorie I	sehr gut	8,0
Lineare Algebra I	sehr gut	8,0
Hauptseminar	bestanden	4,0
Hauptseminar	bestanden	4,0
Nichtphysikalisches Wahlpflichtfach	gut	14,0
Wirtschaftswissenschaften	gut	14,0
Schlüsselqualifikationen	bestanden	6,0
Schlüsselqualifikationen	bestanden	6,0

BACHELOR THESIS (10 CP):

Topic:

Path Integration via Infinitesimal Complex Time Phases

Supervisor(s): Prof. Dr. Jörg Schmalian

Grade:

very good

Classical Experimental Physics I very good 8.0 Classical Experimental Physics II good 7.0 Classical Experimental Physics II good 7.0 Classical Experimental Physics III good 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0	Examination Subject/Module	Grade	СР
Classical Experimental Physics II	Classical Experimental Physics	good	24.0
Classical Experimental Physics III good 9,0 Classical Theoretical Physics 1 very good 6,0 Classical Theoretical Physics II yery good 6,0 Classical Theoretical Physics III yery good 8,0 Modern Experimental Physics III passed 8,0 Modern Theoretical Physics III passed 8,0 Modern Theoretical Physics II passed 8,0 Modern Theoretical Physics III passed 8,0 Modern Theoretical Physics III passed 8,0 Classical Physics Laboratory Courses 1 passed 6,0 Classical Physics Laboratory Courses I passed 6,0 Classical Physics Laboratory Courses I passed 6,0 Modern Physics Laboratory Courses I passed 6,0 Computers and Programming in Physics passed 6,0 Modern Physics Laboratory Courses I passed 6,0 Computers in Physics III yery good 8,0 Analysis III yery good 8,0 Analysis III yery good 8,0 Complex Analysis II yery good 8,0 Complex Analysis II yery good 8,0 Analysis III yery good 8,0 Complex Analysis II yery good 8,0 Advanced Seminar passed 4,0 Non-Physics Elective 9,000 11,0 Non-Physics Elective 9,000 11,0 Key Competences 9,000 11,0	Classical Experimental Physics I	very good	8.0
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Classical Theoretical Physics I good 6.0 Classical Theoretical Physics II good 6.0 Classical Theoretical Physics III very good 8.0 Classical Theoretical Physics III very good 24.0 Comprehensive Exam "Modern Experimental Physics I passed 8.0 Modern Experimental Physics I passed 8.0 Modern Experimental Physics II passed 8.0 Modern Experimental Physics III passed 8.0 Modern Experimental Physics III passed 8.0 Modern Experimental Physics III passed 8.0 Modern Theoretical Physics II passed 8.0 Modern Theoretical Physics II passed 8.0 Modern Theoretical Physics III passed 8.0 Modern Physics Laboratory Courses I passed 6.0 Classical Physics Laboratory Courses I passed 6.0 Classical Physics Laboratory Courses II passed 6.0 Classical Physics Laboratory Courses II passed 6.0 Modern Physics Laboratory Courses II passed 6.0 Modern Physics Laboratory Courses Passed 6.0 Modern Physics Laboratory Courses II passed 6.0 Modern Physics Laboratory Courses Passed 6.0 Modern Physics Laboratory Courses II passed 6.0 Modern Physics Laboratory Courses II Passed 8.0 Modern Physics Laboratory Courses II Passed 8.0 Modern Physics Laboratory Courses II Passed 8.0 Modern Physics Laboratory Courses IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Classical Experimental Physics III	good	9.0
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Non-Physics Elective good 14.0 Economic Sciences good 14.0 Key Competences passed 6.0	Advanced Seminar	passed	4.0
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Key Competences passed 6.0	Non-Physics Elective	good	14.0
	Economic Sciences	good	14.0
	Key Competences	passed	6.0
			6.0



M. Samuelle Der Vorsitzende des Prüfungsaussch

Der Vorsitzende des Prüfungsausschusses Head of the Examination Committee

Anerkennungen

- *) Modul anerkannt
- **) Teilleistung/en mit Note anerkannt
- ***) Teilleistung/en ohne Note anerkannt
- ****) Teilleistung/en teilweise mit Note anerkannt

Anerkennungen von:

Recognitions

- *) Module recognized
- **) Module partially recognized, with grade/s
- ***) Module partially recognized, without grade/s
- ****) Module recognized, partially without grade/s Recognitions from:

Einzelnote

sehr gut = 1,0-1,3

gut = 1,7-2,0-2,3

befriedigend = 2,7-3,0-3,3

ausreichend = 3.7 - 4.0

Individual Grade

Overall Grade

sufficient

Distinction

very good = 1.0 - 1.3

good = 1.7 - 2.0 - 2.3

satisfactory = 2.7 - 3.0 - 3.3

sufficient = 3.7 - 4.0

Gesamtnote

sehr gut bei einem Durchschnitt von 1,0 bis 1,5 very good average grade from 1.0 to 1.5 bei einem Durchschnitt von 1,6 bis 2,5 average grade from 1.6 to 2.5 gut good 2,6 bis 3,5 satisfactory average grade from 2.6 to 3.5 befriedigend bei einem Durchschnitt von

Prädikat

ausreichend

mit = bei einem Durchschnitt bis 1,2
Auszeichnung = bei einem Durchschnitt bis 1,2
und einer Bachelorarbeitsnote von 1,0
with distinction = average grade up to 1.2
and the Bachelor thesis graded with 1.0

3,6 bis 4,0

LP = Leistungspunkte nach ECTS

bei einem Durchschnitt von

CP = Credit Points according to ECTS

average grade from

3.6 to 4.0