

博士論文公聴会の公示（物理学専攻）

学位申請者：JiaJian TEOH

論文題目：Search for dark matter produced in association with a Higgs boson
decaying to two bottom quarks in p-p collisions at $\sqrt{s} = 8\text{TeV}$
with the ATLAS detector

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日時：2017年 8月 7日（月） 16:20–17:50

場所：理学研究科H棟7階7階セミナー室（H701号室）

主査：山中卓

副査：久野良孝、窪田高弘、青木正治、花垣和則

Abstract

A search for dark matter produced in association with a SM Higgs boson which decays to a pair of bottom quarks using p-p collisions at a center-of-mass energy of 8 TeV is presented. The dataset collected by the ATLAS detector at the LHC corresponds to an integrated luminosity of 20.3 fb^{-1} . The observed data are found to be consistent with the expected Standard Model backgrounds. Exclusion limits are presented for the mass scales of various effective field theory operators that describe the interaction between dark matter particles and the Higgs boson. Model-independent upper limits are also placed on the visible cross-sections for

$H(\rightarrow bb)+E_{\text{T}}^{\text{miss}}$ events with $E_{\text{T}}^{\text{miss}}$ ranging from 300 GeV to 400 GeV.