

Abstract Submitted
for the APR12 Meeting of
The American Physical Society

**Practical stochastic template placement
for spinning gravitational-wave inspiral searches** NICKOLAS FOTOPOU-
LOS, STEPHEN PRIVITERA, California Institute of Technology, MELISSA FREI,
Rochester Institute of Technology — Compact binary coalescences are promising
and interesting sources of gravitational-waves for Advanced gravitational-wave de-
tectors. While the rates are highly uncertain, many of these binaries likely have a
black hole component. Astrophysical black holes especially are expected to have sig-
nificant spin angular momentum, but published searches for them have thus far used
matched filter banks built from waveform models that only take component masses
into account—no spin. I present SBank, a stochastic placement scheme that is fast,
can operate with or without a signal mismatch metric, and is easily extensible to
new waveform families. We have so far applied SBank to produce template banks of
three-dimensional, mass1–mass2–aligned-spin waveforms in the low-mass, inspiral-
only regime, with guidance from an analytical signal metric, and in the high-mass,
inspiral-merger-ringdown regime, where we currently have no metric. I will share
what we’ve learned about higher-dimensional banks and what we expect to gain in
detection rate.

Nickolas Fotopoulos
California Institute of Technology

Date submitted: 09 Jan 2012

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