セミナー情報

2023年8月　セミナー一覧

2023.8.4（金）｜セミナー

ロジックセミナー(16:00-- 【会場：合同A棟801(ハイブリッド)】)

通常と開催時間が異なります。
発表者：伊藤 風輝 氏（東京都立大学）
題目：AND-OR木探索の乱択アルゴリズムとその均衡値
概要：
AND-OR木は同じ変数が1度のみ現れるようなブール関数の計算モデルであり、その計算コストは変数のクエリー回数によって定義される。本講演では主に乱択アルゴリズムを興味の対象とする。乱択アルゴリズムによるコスト均衡値、すなわち最小化された最悪計算量は、ランダムでないアルゴリズムのみを用いる場合に比べて真に小さくなることがSaksとWigderson(1986)により示されている。Saksらの手法をベースとして、最適な乱択アルゴリズムの一意性や、乱択アルゴリズムを深さ優先(depth-first)・一方向性(directional)などの条件で制限した場合の均衡値の大小関係について解説する。本研究の一部は鈴木登志雄氏との共同研究である。

2023.8.9（水）｜セミナー

東北大学OS特別セミナー(16:00--18:00【会場：合同A棟8階 801室】)

発表者：Weiping Yan 氏 (Guangxi University)
題目： On solvability of a time-fractional semilinear heat equation, and its quantitative approach to the classical counterpart
概要：
本発表では, 分数階時間微分をふくむ半線型熱方程式の可解性に関する考察をする. 特に典型的な半線型熱方程式として藤田方程式を取り扱う. 有名な結果として, 非線型項の冪が藤田指数の場合, 藤田方程式は非負値時間大域解を持ち得ないことが知られている. さらに藤田指数冪の方程式は, 有界とは限らない或る可積分初期値に対して, 如何なる非負値時間局所解をも有さない. ところが, 時間微分を分数階微分に置き換えた対応方程式は, 藤田指数冪であっても(大域・局所両方の意味で)可解性を示すことが知られている. 本研究では時間分数階藤田方程式について, 初期条件に課される可解性の必要条件ならびに十分条件を導出し, 方程式の大域・局所可解性に関する詳細な考察を行う. 特に時間微分階数を1に近付けたとき, 大域・局所可解性の「破綻」が如何なる数学的定式化により表現されるかを示す. 本研究は比佐幸太郎氏(東北大学) との共同研究に基づく.

2023.8.25（金）｜セミナー

確率論セミナー(15:30--17:00【会場：数学棟 209室】)

発表者：Clément Cosco 氏 (Ceremade, Université Paris Dauphine)
題目：Directed polymers in random environment and the critical dimension.
概要：
The model of directed polymers describes the behavior of a long, directed chain that spreads among an inhomogeneous environment which may attract or repulse the polymer. When the spacial dimension is larger than three, a phase transition occurs between diffusivity (high temperature) and localization (low temperature). On the other hand, in dimensions one and two the polymer is always localized. Dimension two is however critical, as one can recover a phase transition by letting the temperature tend to infinity under a specific parametrization (Caravenna-Sun-Zygouras 17'). In this talk, I will present some of the main results that are known about this scaling regime, and discuss the recent advances that have occurred in the past few years. In particular, I will describe some results that I have obtained with my coauthors (Anna Donadini, Shuta Nakajima and Ofer Zeitouni) on the diffusive phase and its relation to Gaussian logarithmically correlated fields. I will also discuss connexions of the model with the Kardar-Parisi-Zhang (KPZ) equation and the stochastic heat equation.

2023.8.29（火）｜セミナー

ロジックセミナー(15:00-- 【会場：合同A棟803(ハイブリッド)】)

発表者：仁木 哲 氏（Ruhr University Bochum）
題目：How can an intuitionistic logician understand connexive constructible falsity?
概要：
Constructivists have usually understood negation as an implication to absurdity. Nonetheless, there have also been dissenting voices to this conception, one of the most notable among which are ones who advocate an alternative notion called constructible falsity. Nels David Nelson (1918-2003) introduced this notion as a `strong' form of negation, which provides a direct counter-example to its negand. This `strongness' is however often eschewed in favour of paraconsistency, making the resulting negation, severed of its relationship with intuitionistic negation, harder for intuitionistic logicians to comprehend. The issue is more serious in a variant of constructible falsity introduced by Heinrich Wansing, which validates so-called `connexive' principles. This is due to the provability of a contradictory pair of

formulas, which prohibits an interpretation of it as a `strong' negation without bringing triviality. As a result, Wansingian negation should appear even more mysterious to the eyes of intuitionistic logicians. Another way to relate intuitionistic and Wansingian negations is to accept the law of excluded middle for the latter, as studied by Wansing and Hitoshi Omori. This move, however, compromises constructivity, and therefore is perhaps not so preferable either. In this talk, I will try to shed some lights on this issue, by discussing other ways to introduce an interaction between intuitionistic and Wansing negations. I will compare relative advantages of the interactions, which may enable intuitionistic logicians to better understand Wansingian negation and its connexivity.

〒980-8578　仙台市青葉区荒巻字青葉6番3号　TEL:022-795-6401 FAX:022-795-6400